TRM016.01 ENVIRONMENTAL REGULATIONS

U.S. DEPARTMENT OF JUSTICE
FEDERAL BUREAU OF PRISONS

ENVIRONMENTAL REGULATIONS

TECHNICAL REFERENCE MANUAL

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PREFACE

A Road Map to Environmental Compliance

The management of environmental programs can be as complex as the universe of Federal, state, and local regulations that govern them. To date, there exists more Federal codified regulations governing management of the environment than there are regulations in the U.S. Tax Code. In addition, the complexity of these issues are often times compounded further when factoring in state regulations into the compliance process.

Considering the amount of written regulations being discussed, it becomes obvious that no one manual could contain the total volume of these combined regulations. This Environmental Technical Reference Manual (TRM) does not attempt to interpret the Code of Federal Regulations. It is, however, intended to be used in concert with them and serve as the road map to compliance. Along the way it will alert the program manager of the regulatory requirements and guide him/her to the specific regulations.

This Manual is intended to serve as a point of departure and frame of reference for those managers responsible for environmental programs. It is not intended to be the definitive authority regarding environmental management issues. Moreover, it is intended to direct program managers such as Safety staff, Facilities staff, and UNICOR staff to the environmental Statutes which require regulatory compliance within their respective program areas.

Up-To-Date Information

When managing a specific compliance program with the contents of this TRM, it should be considered that environmental statutes are not "static" documents. The regulations associated with them are frequently being amended and the statutes themselves undergo routine reauthorization. The subjects discussed in this document are only current to the date of its writing. As a case in point, amendments to the Clean Air Act are scheduled for the summer of 1995 and the Clean Water Act is currently up for reauthorization.

In order to stay current with the universal requirements of environmental regulations, it is essential for each facility to establish working relationships with the state and county offices having regulatory authority. Not only will they be able to give assistance and guidance in matters regarding Federal statutes but they will also be able to keep staff apprised of state regulations that are often times more stringent. A working relationship with these offices can ease the burden of transposing "statutory legalese" into "standard operating procedures." In addition, positive relationships with regulatory personnel not only fosters good compliance programs but also

serves to identify your facility and the Bureau as a proactive agency.

Environmental Philosophies and Regulatory Programs

As illustrated in previous BOP documents, the Bureau manages its environmental affairs within the concepts of "Environmental Stewardship". Translated, this concept is just what it implies, "a caring for the environment".

In a more tangible sense however, there also exists an incumbent obligation for the agency to be in compliance with Federal and state environmental laws. By integrating regulatory compliance programs with both the statutory requirements and a stewardship management concept, the results are facilities which are in regulatory compliance and have a positive impact on the environment.

Environmental Technical Manual
(Content and Structure)

This TRM is divided into two primary sections. The first section entitled Environmental Programs provides a synopsis of each environmental Act (Federal Law). The second, and largest, section of the TRM is entitled Environmental Operations. This section is in effect the nuts and bolts of the regulatory compliance programs. In this section, the program manager can reference specific requirements which will aid in structuring the compliance program.

Along with the hard copy of the TRM you will also receive a copy of the manual on diskette. This will assist as a "ready reference" when researching regulatory requirements. While operating in the WordPerfect program, simply pull up the document and use the "F2" function to locate and identify all of the sections that may discuss a specific topic of interest. You may also choose to use a BOPDOCS version of the TRM.

PART A

ENVIRONMENTAL PROGRAMS

This section briefly reviews the main **Federal** environmental regulations which directly affect BOP facilities.

> **It is important that each facility is ALSO familiar and in compliance with their state and local environmental laws and statutes!**

Many states such as California, have passed environmental legislation which is much more stringent than the Federal acts which are discussed in the following sections.

ENVIRONMENTAL PROGRAMS

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I. NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

The **National Environmental Policy Act of 1969** is usually only a concern when construction projects are undertaken. This is a broadly encompassing piece of legislation which attempts to ensure that major projects and actions shall not result in significant adverse impacts to the environment.

Although this Act does not specifically call out standards or permit requirements, it activates other pieces of legislation such as the **Endangered Species Act**, the **Historical Preservation Act** and the **Clean Water Act** (ea. wetlands and dredge-and-fill projects).

NEPA accomplishes this by requiring that an environmental review process be conducted through an **Environmental Assessment (EA)** and/or an **Environmental Impact Statement (EIS)** before construction of a project can proceed.

Only certain actions and situations will trigger the NEPA process. An individual Bureau of Prisons facility will rarely have to deal directly with NEPA, since in most circumstances the Central Office's, Site Selection\Activation offices will be fully involved with such projects. However, should an existing BOP facility undertake a large scale construction project the requirements of NEPA should first be reviewed.

II. CLEAN AIR ACT (CAA)

From its original enactment in 1963, the **Clean Air Act (CAA)** has undergone many amendment changes, the most recent being the 1990 amendments. This piece of environmental legislation allows the EPA to set such regulations as uniform **National Ambient Air Quality Standards (NAAQS)**, **New Source Performance Standards (NSPS)** for stationary sources, **National Emission Standards for Hazardous Air Pollutants (NESHAPs)**, performance restrictions for mobile sources and labeling requirements for ozone depleting substances.

Although the EPA has enforcement authority, most of the CAA programs are implemented at the state level. These states use their own **State Implementation Plans (SIPs)** for meeting the CAA requirements (CAA Section 110). All SIPs are reviewed and approved by the EPA.

NAAQS (National Ambient Air Quality Standards)

All areas in the United States have been divided into **Air Quality Control Regions** (CAA Section 109). These various zones were required to be in attainment for all the six existing NAAQS (sulfur dioxide, nitrogen dioxide, carbon monoxide, ozone, particulate matter (PM10) and lead) by 1977.

There are two levels of NAAQS, **primary** which are set to protect public health and **secondary** which are intended to protect public welfare.

Locations which failed to achieve the NAAQS goals are classified as **nonattainment areas** (CAA Section 171-193) and are subject to additional regulations such as transportation restrictions, inspection/maintenance requirements for vehicles and strict performance standards on construction projects which result in air emissions such as paint booths and boilers.

In nonattainment areas, the EPA requires that **Lowest Achievable Emissions Rates (LAER)** be achieved for new or modified sources and that **Reasonably Available Control Technology (RACT)** be used on existing sources. The EPA has also issued **Control Technique Guidelines (CTG)** for certain industries. These CTGs contain specific technological controls, designs and strategies for reducing emissions.

In air quality regions which currently meet NAAQS standards, the areas are still affected by an EPA program entitled **Prevention of Significant Deterioration (PSD)**(CAA Section 160-169). The intention of this program is to ensure that these **attainment** regions will not significantly degrade their air quality. The EPA requires that **Best Available Control Technology (BACT)** be used in attainment zones.

NSPS (New Source Performance Standards)

NSPS (CAA Section 111) only apply to construction and new equipment installation projects involving new or modified stationary sources which have been designated as air pollution contributors. The EPA presently has over 60 new source operations which fit into this category and therefore, are affected by the NSPS requirements (i.e. aboveground storage tanks such as volatile organic liquid storage vessels and bulk gasoline terminals).

In order to achieve these **NSPS** requirements, the facility may need to install certain emission control technologies. In fact, the intention of this act is to ensure that the most current and efficient control technologies are utilized. Different equipment requirements apply (**"best available control technologies" (BACT)** or **"reasonably available control technologies" (RACT)**) for a new source, depending if it will be located in an attainment or a nonattainment zone. Before the 1990 CAA amendments, NSPS only applied to facilities which emitted at least 100 tons/year of a regulated substance. However, now smaller emissions sources (50, 25 and 10 tons/year) in nonattainment regions are also encompassed by these NSPS regulations. Facilities must check with their local regulatory agency to determine their respective reporting threshold level.

NESHAPS (National Emission Standards for Hazardous Air Pollutants)

NESHAPS (CAA Section 112) originally covered eight substances: asbestos, benzene, beryllium, coke oven emissions, inorganic arsenic, mercury, radionuclides and vinyl chloride. However, the 1990 amendments required that over the next ten years, the EPA must establish performance standards for an additional 181 **Hazardous Air Pollutants (HAPs)**.

These restrictions will automatically apply to sources which emit at least ten tons/year of a listed NESHAPS pollutant or twenty-five tons/year or more of any combination of these listed substances. Sources which produce these levels of emissions are called **Major Sources**.

The EPA wants to ensure that 90 percent of the thirty most hazardous air pollutants in a region are being regulated. In order to achieve this goal, the smaller sources or **Area Sources** in that location may also be required to comply with NESHAPS.

As with NSPS, NESHAPS also calls out for the use of special emissions control technologies (**"maximum achievable control technologies" (MACT)**) and the EPA has listings of the industrial applications which must use this type of equipment.

III. CLEAN WATER ACT (CWA)

The origins of the **Clean Water Act (CWA)** can be traced back to the 1899 Rivers and Harbors Act and the 1948 Federal Water Pollution Control Act (FWPCA). Like the Clean Air Act, this piece of legislation has also undergone many changes and amendments. In 1977, the Federal law which regulated the Nation's waters was officially renamed the Clean Water Act. Further amendments which included funding measures and strategies to attain water quality goals were incorporated into this statute in 1987.

The main points which this act addresses are wastewater permitting through the **National Pollutant Discharge Elimination System (NPDES)**, wetlands/dredge-and-fill permitting, oil and hazardous substance control, stormwater discharge permitting, effluent standards for industrial discharge operations and new source performance standards.

NPDES

The NPDES program makes it illegal to discharge any non-permitted "**pollutant**" from a point source into the navigable waters of the United States.

- **navigable waters** includes such areas as oceans, lakes, rivers, streams, marshes, swamps, bogs, and even seasonal creeks.

- **pollutant** covers a broad range of categories and can include the addition of solid waste, sewage, garbage, heat, discarded materials, filter backwash, industrial process wastewater, cooling water, chemicals, rocks, sand etc. into a body of water.

- **point source** can be as diverse as a pipe, well, channel, container, tunnel or floating craft.

The NPDES permit conditions vary depending on the type of pollutant, the type of industry and the water quality into which the pollutants are being discharged. The issued permit may limit the amount of a constituent that can be discharged and/or it can include such requirements as utilizing **best management practices (BMP)**.

Special focus is also given to **toxic pollutant discharges** and **stormwater discharges** resulting from industrial or construction activity. Furthermore, industries which discharge to **publicly owned treatment works (POTWs)** are also required by the CWA to satisfy certain **pretreatment standards**.

Either states or the EPA can be responsible for issuing a NPDES permit for a facility. Currently, EPA has established effluent standards for approximately 100 chemicals. States are responsible for setting water quality standards for bodies of water in their jurisdiction.

Wetlands/Dredge-and-Fill

The **Wetlands/Dredge-and-Fill program** requires that these areas be identified and any potential development on these sites is regulated. Furthermore, it is an attempt to ensure that the development of wetlands and the discharge of dredge or fill material into navigable waters is conducted following the guidelines of the Army Corps of Engineers.

SPCC (Spill Prevention, Control and Countermeasure)

The CWA serves to control spills of oil and hazardous materials into navigable waters or the adjoining shorelines, by requiring **Spill Prevention, Control and Countermeasure (SPCC)** rules. These rules require facilities to have a written spill contingency plan which covers such issues as: spill prevention, spill reporting, training and inspections. Additionally, oil pollution regulations are also covered by the **Oil Pollution Act (OPA) of 1990** which was an amendment to the CWA. OPA covers liability, compensation and prevention issues regarding a spill.

IV. SAFE DRINKING WATER ACT (SDWA)

The Safe Drinking Water Act (SDWA) was passed by Congress in 1974, and has been amended several times since then. The purpose of the Act is to make sure that the drinking water supplied to the public is safe and wholesome. The Environmental Protection Agency (EPA) is the Federal agency which has the responsibility of writing the regulations to carry out the provisions of the Act. EPA sets national drinking water standards which all water supplied to the public must meet. The people or facilities who supply the water are responsible for making sure that the water meets the standards.

The Act was amended most recently in 1986. The amendments require the development of more drinking water standards and more technical requirements. As you read through the Operations section of this manual, keep in mind that EPA is in the process of revising many of these SDWA regulations. The Federal drinking water program was designed to be delegated, which means that approved government agencies (usually states) carry out the program on a day-to-day basis. BOP facilities are responsible for complying with the requirements of this Act and must be responsive to the operation and testing requirements of their local water regulatory agency.

V. TOXIC SUBSTANCES CONTROL ACT (TSCA)

The purpose of the **Toxic Substances Control Act (TSCA) of 1976** is to oversee the production, distribution and use of hazardous materials before they become a threat to public health and the environment. Congress enacted this legislation due to concern over the misuse of hazardous chemicals and the dangers presented by a lack of enforcement and regulatory controls.

This act formulates one component of the EPA's "**Cradle-to-Grave**" policy. Since much of TSCA focus is on the actual manufacturing of new chemical substances only certain portions of the Act are applicable to BOP facilities.

The EPA is required by TSCA to keep a list of all the chemical substances which are manufactured or processed by industries in the United States. Presently, this inventory contains over 70,000 entries.

Of all these TSCA substances, only five are actually regulated by the agency: **asbestos**, **polychlorinated biphenyls (PCBs)**, **dioxins**, **chlorofluorocarbons (CFCs)** and **nitrosamine producing mixtures**. If any of these chemicals are utilized by a facility, it is required to undergo special recordkeeping, labeling, or quality control restrictions.

Operations at a single site which manufacture or import over 10,000 pounds of a TSCA inventory listed material, must submit a special report every four years to the EPA.

If a facility imports or processes a TSCA inventory listed chemical, it must maintain special records which contain information regarding: the volume of substance used, environmental fate data, manufacturing information, worker exposure data and observations of any adverse health and environmental reactions caused by the substance.

VI. RESOURCE CONSERVATION AND RECOVERY ACT (RCRA)

The **Solid Waste Disposal Act of 1976 as amended (otherwise known as the Resource Conservation and Recovery Act - RCRA)** cover a wide array of environmental issues such as: proper disposal practices for nonhazardous solid wastes, landfill regulations, resource recovery, medical waste management and underground storage tanks. In addition, RCRA introduced the "**cradle-to-grave**" philosophy for dealing with hazardous materials. This act was most recently amended in 1984 by the **Hazardous and Solid Waste Amendments (HSWA)**.

The **RCRA hazardous waste section (Subtitle C)** implements a program which follows the generation, transport, treatment, storage, and disposal of these materials. Most BOP facilities will only be concerned with the generation, transport and storage portions of this section.

Generators

RCRA has divided generators into three categories:

(1) **conditionally exempt small-quantity**;

(2) **small-quantity**

(3) **large-quantity**.

Depending upon which group your facility fits, differing requirements will apply.

Generators have special on-site accumulation requirements they must adhere to such as labeling criteria, special container/tank storage restrictions, proper hazardous waste recordkeeping, and certain plans for spill contingency and emergency response situations.

Manifest

Generators also need to maintain a track record of their hazardous substances once they leave the facility. This is accomplished through a **manifest tracking log**. The manifest form requires the generator to fill out general information such as the facility's name, address, an EPA identification number and it must be signed and dated.

The document is then also signed by each party who handles the hazardous waste during shipping, treatment and disposal after it has left the facility. Copies of these signed documents must then be returned to the generator. If this is not done, a report must be submitted by the generator to the EPA.

Hazardous Waste

RCRA defines **hazardous waste** as any substance listed in 40 CFR Part 261 or if it fits under the EPA description of a hazardous waste by possessing any of the following characteristics: **ignitability**, **corrosivity**, **reactivity**, **toxicity**.

Only under certain conditions does used oil fall into the hazardous waste category. This is because the EPA wants to encourage recycling for this material.

It should be noted that RCRA describes hazardous waste as being a solid waste. This can be confusing since materials which are not physically solids such as liquids, semi-solids and contained gases are also included in this solid waste category.

Underground Storage Tanks (USTs)

Underground storage tanks (USTs) which contain petroleum and certain hazardous chemicals are also regulated by **RCRA (Subtitle I)**.

Only CERCLA (See the Comprehensive Environmental Response, Compensation and Liability Act below) defined hazardous substances are covered by RCRA's UST program.

RCRA, Subtitle C classified hazardous materials are not included. The Act describes which types of tank systems are regulated by the UST program and requires owners of applicable structures to notify the state within which it is located.

Many types of tanks are excluded from the UST regulations. Tanks which are not exempt must meet certain design, construction, installation and operation standards. Such pieces of equipment as spill and overflow prevention systems and special release detection units are mandated. Furthermore, by December 22, 1998 all existing USTs must satisfy the previously mentioned requirements. The UST program also requires certain actions for spills and overflows to the environment.

VII. COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT (CERCLA) or SUPERFUND

One of the last major environmental acts to be passed by Congress was the **Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980**.

Although RCRA currently regulates the handling and disposal of hazardous wastes, previous disposal practices have resulted in health threats to the public and the environment, making remediation necessary. In addition, many locations around the country had been used for illegal "midnight dumping" of these hazardous materials and needed to be cleaned up. CERCLA was established by Congress as the mechanism to address the remediation of these hazardous waste sites.

CERCLA established a cleanup fund which could be used to remediate these contaminated locations. The monies were collected from a tax imposed on the larger hazardous material producing industries. However, the EPA's policy is to find the **potentially responsible parties (PRPs)** and have these groups cleanup the contaminated site and pay for the remediation costs themselves. Until a PRP can be found or if the situation results in litigation, the EPA may proceed with cleanup and then retroactively seek financial reimbursement.

Hazardous Chemical Release

If proper environmental practices are followed, most BOP facilities will never have to deal with the remediation portion of CERCLA. However, CERCLA also calls for certain **response actions** in the event of a hazardous materials release or if a potential threat for such a release exists.

It is important to understand that many different acts cover leaks and spills (CERCLA, CWA, EPCRA, RCRA, TSCA, OSHA). Therefore, it is crucial to familiarize oneself with the different response requirements which are mandated by these various statutes.

A **CERCLA release** occurs when a leak or spill of a hazardous substance into the environment poses an imminent threat to the public.

A **CERCLA classified hazardous material** is any substance which has been listed as hazardous by RCRA, CAA, CWA, and TSCA. Petroleum and natural gas products are not considered to be hazardous materials under CERCLA.

The act defines "**environment**" as including a contained material within a facility if it can still volatilize or migrate into the surrounding air or water. If a CERCLA release occurs, one must follow the procedures called out in the **National Contingency Plan (NCP)**.

VIII. SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT (SARA)

Congress passed the **Superfund Amendments and Reauthorization Act (SARA) in 1986**. It was felt that releases of hazardous materials into the environment were not being properly reported. Furthermore, there was concern that sufficient precautions which would protect the public from an emergency release of hazardous substances, were lacking. This belief was a direct reaction to tragedies which had occurred during the early 1980s in Bhopal, India and Chernobly, USSR.

Since SARA presented significant additions to the previous act, these amendments are often discussed independently. The main components were:

(1) CERCLA was extended an additional five years;

(2) More funding was provided;

(3) The Act also required the Department of Labor to formulate worker protection standards for employees exposed to hazardous materials through their normal work operations, cleanup of a hazardous waste site or who were dealing with an emergency release of such a substance (see OSHA section below). This program is often referred to as **HAZWOPER** (**Hazardous Waste Operations and Emergency Response**);

(4) In addition, a new set of hazardous substance laws governing **emergency response**, **reporting** and **community right-to-know** were established. This section was entitled **Emergency Planning and Community Right-to-Know (EPCRA)**. EPCRA is the portion of SARA which directly effects BOP facilities.

IX. EMERGENCY PLANNING AND COMMUNITY RIGHT TO KNOW ACT (EPCRA) (from SARA Title III)

There are two main purposes for which the 1986 **Emergency Planning and Community Right-to-Know Act (EPCRA)** was established:

(1) to set up a program which would protect the public and environment from an accidental release of hazardous materials.

(2) to maintain a track record of hazardous materials usage and releases by industries and businesses.

In order to prepare for a chemical spill or leak, industries and businesses are required to work with the communities and local governments.

Two main sections of the Act focus on:

(1) emergency response planning (section 302); and

(2) emergency release notification (sections 304).

Only facilities which use above a specific **threshold planning quantity (TPQ)** of a hazardous substances found on the EPA's list of **Extremely Hazardous Substances** (40 CFR 355, Section 302) must comply with emergency response planning. An updated listing of these materials is available from EPA in their publication entitled, **"Title III List of Lists"**.

Emergency Response Plan

Applicable facilities must put together an emergency response plan and inform their **State Emergency Response Commission (SERC)** and **Local Emergency Planning Commission (LEPC)** that they are affected by EPCRA.

These various commissions will require additional information about the facility and the types of chemicals used on the premises. The SERC and LEPC may also need to review the facility's emergency response plans.

These plans need to cover such information as evacuation procedures, training programs and emergency release notification steps.

Release Notification

Hazardous substance **release notification** is mandated when a leak or spill exceeds the specified **reportable quantity (RQ)** for a particular material. If no RQ is provided for a certain substance then 1 pound should be used as the RQ.

Remember, CERCLA even deems a contained leak or spill within a facility as a release if the material can volatilize or migrate into the air or water.

However, EPCRA defines a release to occur only if the leak or spill migrates off of facility grounds. If an EPCRA release occurs, the facility must notify the local fire department, the LEPC, the SERC and the National Response Center (NRC). Following a release, it is necessary to submit a written notification to certain agencies.

Community Right-to-Know

MSDS & Tier Reports

In order to satisfy the second objective of EPCRA involving hazardous materials usage, the Act focuses on hazardous materials reporting (**Community Right-to-Know**) and on establishing a **toxic release inventory (TRI)**.

Certain conditions apply to facilities which store, use or produce hazardous substances for which OSHA requires a **Material Safety Data Sheet (MSDS)**, if these materials are stored in excess of the following threshold levels:

(1) 10,000 pounds or greater for a **Hazardous Substance**;

(2) 500 pounds or greater for an **Extremely Hazardous Substance (EHS)**.

Facilities which fall into this category must:

A. submit either:

- copies of all their MSDSs for listed chemicals at or above the TPQ; or

- a single list of all their MSDS chemicals organized by hazard grouping, to their SERC, LEPC and local fire station (Section 311).

These lists must be updated whenever changes occur (i.e. new chemicals added and old materials omitted).

B. prepare either a **Tier I or II Emergency and Hazardous Chemical Inventory** form.

TRI Reports

Finally, industries or businesses which:

(1) have 10 or more full-time employees;

(2) are in one of the SIC codes 20 through 39*; and

(3) manufacture, import or process a listed toxic chemical above a listed threshold level, must report their yearly toxic release emissions.

This report is entitled the **Toxic Release Inventory (TRI) Form** or just **Form R** (Section 313) . The threshold levels at which operations must follow **TRI reporting** are 25,000 pounds/year for manufacturers, importers and processors. Industries which use a listed substance, but do not incorporate it into a product, have a TRI reporting requirement of 10,000 pounds/year.

Special exemptions do apply for fuels used for heating systems, fleet vehicle operations, and chemicals used in HVAC systems. These exemptions should be references prior to filing under the TRI program.

It is important to differentiate between the requirements of EPCRA and HAZWOPER (see OSHA section). EPCRA focuses on protecting the entire community from hazardous materials, where as HAZWOPER only addresses the safety and health of employees exposed to hazardous substances through hazardous waste operations or emergency releases.

* The SIC Codes listed in (2) do not apply to Government facilities due to an Executive Order mandate that requires all Federal facilities to comply regardless of SIC code.

X. OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA)

The 1970 **Occupational Safety and Health Act (OSHA)** was enacted to ensure safe and healthy workplace conditions by establishing set occupational and safety standards for the work environment.

From an environmental health perspective, BOP facilities may be affected by several aspects of OSHA such as **hazard communication requirements** (Worker Right-to-Know), **process safety management procedures**, restrictions regarding occupational exposure to hazardous chemicals and most significantly by the **Hazardous Waste Operations and Emergency Response (HAZWOPER)** program.

Hazard Communication

OSHA mandates that all facilities which use hazardous chemicals must have a hazardous communications program to educate their employees, use proper labeling techniques, maintain material safety data sheets for these various substances and provide a written hazard communication program which shows how the facility is complying with these requirements.

The act gives a definition of what characteristics are considered hazardous as well as provides a list of certain chemicals which automatically fit this definition.

Process Safety Management

Applications which make, use or store "highly hazardous" materials are subject to certain **process safety management (PSM)** rules. The PSM program is intended to protect employees from chemical releases, fires or explosions which could occur during an industrial accident.

Any new process which intends to use one of these highly hazardous chemicals, cannot be started-up until certain steps required by PSM, have been undertaken. These procedures involve collecting **process safety information (PSI)** and performing a **process hazard analysis (PHA)** report.

Laboratories

Some BOP facilities may have laboratories which use hazardous chemicals listed in 29 CFR section 1910. If so, they will be subjected to special OSHA occupational exposure requirements covering work practices, procedures and training.

HAZWOPER

BOP facilities in which employees deal with hazardous waste activities may be affected by **HAZWOPER**. This program covers certain operations where workers may be exposed to hazardous substances. It requires employers to uphold certain worker protection standards, conduct employee training, and implement a safety and health program.

Work-sites must also be evaluated to determine what type of hazards exist and identify what precautions need to be taken to protect employees. These protective measures may involve equipment modifications or controls, special protective gear or work practice modifications.

Unlike EPCRA (See EPCRA Section), which focuses on the rights and safety of the entire community, HAZWOPER specifically addresses the rights and safety of employees working with or exposed to hazardous chemicals. Certain prerequisites for training exist under this program and must be provided to designated employees which would be utilized in various levels of response.

XI. ENVIRONMENTAL EXECUTIVE ORDERS

BOP facilities are regulated by legislation created at the Federal, state or local levels. However, a specific form of regulations exist for Federal agencies and is administered through the President of the United States. These particular regulations are entitled **Executive Orders**.

Current Executive orders related to pollution prevention are intended to bring Federal government agencies into compliance with some of the main environmental legislation initiatives. The recently stated goals of these orders are to establish the Federal government as the national leader in implementing pollution prevention policies and practices across all missions, activities, and functions in order to promote the sustainable use of natural resources and protect the environment and human health.

A. ACQUISITION, RECYCLING AND WASTE PREVENTION (Executive Order 12873)

This Order promotes Federal agency efforts to prevent the generation of waste at the source and to institute aggressive recycling programs. Each agency must establish a goal for solid waste prevention and a goal for recycling, to be achieved by 1995. An annual report on progress in achieving these goals is also required. The BOP's compliance with this reporting requirement is being accomplished through the annual recycling computer program report.

This Order also calls for Federal agencies to implement Affirmative Procurement Programs. DOJ has implemented such a program and the Bureau is responsive to that directive. The required annual reports for this program are developed through the Bureau's Financial Management section and forwarded to DOJ.

B. OZONE DEPLETING SUBSTANCES (Executive Order 12843)

This executive order complements Section 608 of the **1990 Clean Air Act (CAA)**. It directs Federal agencies to change their procurement policies to reduce the use of **ozone-depleting substances** earlier than the 1995 phase-out deadline called in the **Montreal Protocol**. Federal agencies are directed to modify specifications and contracts that require the use of ozone-depleting substances and to substitute non-ozone-depleting substances to the extent economically practicable.

C. RIGHT-TO-KNOW AND POLLUTION PREVENTION (Executive Order 12856)

Requires Federal agencies to develop written pollution prevention strategies and facility-specific plans and to set goals for eliminating the acquisition, manufacturing, processing or use of **toxic chemicals** and **extremely hazardous substances**.

To satisfy the minimum requirements of this Order, BOP facilities which meet the requirements need to:

(1) comply with the **Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA)**. This act requires certain facilities to conduct an annual **Toxic Release Inventory** and to implement such programs as emergency response planning, hazardous substance release notification and hazardous materials reporting;

(2) comply with the **Pollution Prevention Act of 1990 (PPA)**. This requires facilities to establish a voluntary goal for reducing total releases and off-site transfers of toxic chemicals or toxic pollutants by 50% by 1999. These goals must be achieved through source reduction practices to the extent possible;

(3) each BOP facility must develop a site specific pollution prevention plan by the end of 1995 which addresses the requirements of the Order. Those facilities which are required to report under EPA's TRI program (Form R) must incorporate provisions in their plan which will assist their agency's overall goal in attaining a reduction in the use of toxic chemicals by 50% by 1999.

PART B
OPERATIONS

This section of the Environmental Technical Reference Manual separates the main requirements of the major environmental Statutes, discussed previously in Part A of this manual, into separate operational categories in much the same way they would be managed within a Bureau facility:

I	Facility Construction & Modification
II	Tanks (Above Ground & Below Ground)
III	Emergency Planning
IV	Emergency Response
V	Community Right-To-Know
VI	Employee & Worker Protection
VII	Water Resources Management
VIII	Air Resources Management
IX	Hazardous Materials Management
X	Non-Hazardous Waste Management
XI	Hazardous Waste Management
XII	Medical Waste Management
XIII	Waste Minimization & Life Cycling

It is recommended that this technical manual be used in conjunction with the section of the Code of Federal Regulations (CFR) for **Protection of the Environment (40 CFR)**.

To order these documents:
Call U.S. Government Printing Office for pricing information: 202/512-1800

OPERATIONS

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I. FACILITY CONSTRUCTION & MODIFICATION

The commentaries incorporated under the following headings are intended to assist staff to identify environmental regulatory requirements that may apply to a construction, demolition, or on an equipment installation project.

ASBESTOS

Before beginning any demolition and renovation projects involving asbestos, it is necessary to contact the appropriate state agencies to obtain approval, permits, and forms (e.g. air emissions and disposal permits).

For example, a special EPA form for these type of projects, required by the Clean Air Act's Air Toxic's program, is located in 40 CFR Part 61.145, figure #3. States may also have their own forms in place of the mentioned EPA forms.

Also, reference Chapters VI - Employee & Worker Protection and Chapter IX - Hazardous Materials Management for more information on asbestos.

ENDANGERED SPECIES ACT

Federal facilities need to ensure that development or construction projects will not jeopardize the existence of any endangered or threatened animals and plants in the area. (e.g. One may encounter difficulties obtaining an NPDES Permit to operate a new sewage treatment facility if it is found that the effluent of that facility will be discharged into an endangered species habitat.)

In order to address this concern, contact your regional U.S. Fish and Wildlife Service, state Department of Natural Resources, or the state EPA office for their assistance.

ENERGY EFFICIENCY (Executive Order 12902)

Under Executive Order 12902, Federal agencies are directed to:

1. reduce overall energy use in Federal buildings by 30% by 2005 from 1985 energy levels;

2. increase overall energy efficiency in industrial Federal facilities by 20% by 2005 using 1990 as the baseline year;

3. minimize use of petroleum products at Federal facilities by switching to a less-polluting alternative energy source such as natural gas or solar and other renewable energy sources;

4. designate one major building as a showcase for energy or water efficiency;

5. purchase products in the upper 25 percent of energy efficiency, whenever practicable and cost-effective;

6. conduct audits and prioritization surveys on all facilities.

LIGHTING UPGRADES

PCB Containing Ballasts

BOP facilities involved in lighting upgrades need to dispose of PCB containing ballasts in accordance with local disposal regulations (See Chapter 9, Hazardous Materials Management).

If you are working with an outside contractor or lighting management company on lighting upgrades, you should be sure your contract includes a clause requiring the contractor to dispose of fluorescent tubes and PCB light ballasts in accordance with local disposal regulations.

NOTE: If PCB transformers are locally classified as a hazardous waste, RCRA manifesting and disposal certifications are required.

NEW SOURCE PERFORMANCE STANDARD PRECONSTRUCTION REQUIREMENTS

Under the Clean Air Act, new sources which are being constructed or existing sources which undergo modifications may need to go through a preconstruction review. This requirement especially applies if your facility exist in a non-attainment rated zone.

Call your local authorities to determine what types of preconstruction review requirements are applicable.

(Ref. Chapter VIII - Air Resources Management, New Sources for more information on new source performance standards (NSPS).)

POLLUTION PREVENTION

Under the National Environmental Protection Act (NEPA) and section 309 of the Clean Air Act (CAA), Federal agencies are encouraged by EPA to begin considering **pollution prevention** concepts and approaches as early as possible in the planning process of new facility construction or modification projects.

Pollution prevention considerations should be included into the alternatives analyzed in environmental impact statements (EIS) and environmental assessments (EA).

(Ref. Chapter XIII, Waste Minimization & Life Cycling for more information on pollution prevention.

STORM-WATER PERMITS

Check your state's specific storm-water regulations as Storm-Water Permits are frequently required for construction projects that involve grading or excavation.

The EPA defines construction activity requiring storm-water compliance to include: clearing, grading and excavation activities, except operations that result in the disturbance of less than five acres of total land area which are not part of a larger common plan of development or sale. However, it is also

important to note that some states have reduced the threshold for area effected down to one acre. When storm-water control plans are required sedimentary runoff control measures must be implemented and in some instances a NPDES permit obtained. Under Federal regulations, agriculture activities are exempted from this requirement. (For more information on storm-water Ref. Chapter VII - Water Resources Management, and Storm-water Management.)

APPLICATION REQUIREMENTS

Submit an Form #1 (EPA #3510-1) as well as supply the following information:

1. narrative description of the construction activity;
2. total area of the site and area to be excavated under the permit;
3. proposed measures to control pollutants in storm-water discharges during and after construction operations;
4. estimate of run-off coefficient and increase in impervious areas after construction;
5. name of receiving water.

II. TANKS

UNDERGROUND STORAGE TANKS (UST)
(RCRA Subtitle I)

REASONS UST REGULATIONS WERE DEVELOPED

1. To **prevent** leaks and spills;
2. To **find** leaks and spills;
3. To **correct** the problems created by leaks and spills;
4. To **ensure** that owners and operators of USTs can pay for correcting the problems created if their UST's leak.

New USTs are defined as underground storage tanks installed after December 1988.

Old USTs are underground storage tanks installed before December 1988.

The complete regulations for USTs can be found in:

(a) the September 23, 1988 Federal Register

(b) 40 CFR part 280 (technical standards and corrective action requirements)

(c) RCRA Subtitle I

The following EPA booklets are excellent resource material for staff responsible for managing these areas:

Don't Wait Till 1998 UST booklet (EPA 510-B-94-002)
Musts for USTs
Straight Talk on Tanks

NOTE: State and local regulations may differ significantly from the Federal requirements being discussed. Therefore, ensure you are familiar with the state criteria as well.

Resources !

For a more in-depth understanding of the regulations involving USTs, an excellent reference source is EPA/530/UST-88/008 Musts for USTs. This guide goes into greater detail on such topics as: corrective actions for leaks and spills, technical questions and answers, proper installation of USTs, protecting tanks and piping from corrosion, detecting leaks in tanks and piping. It also contains lists on references (eg. videos, brochures, handbooks), organizations (eg. National Association of Corrosion Engineers, Petroleum Equipment Institute, National Leak Prevention Association) and industry codes and standards. To order this booklet, call the EPA Underground Storage Tank Hotline at 800/424-9346.

APPLICABLE TANKS

All tanks which meet the following **two** requirements are subject to UST regulations:

1. contain a regulated CERCLA defined **hazardous substance** or a **petroleum product.**

2. 10% or more of the tank volume, including the underground connecting piping, is beneath the ground surface.

(Also ref. Chapter IV - Emergency Response for additional information regarding tank management regulations.)

UST EXEMPTIONS

The following systems are exempt from UST regulation and are found in 40 CFR 280.10 (b) & 280.12:

1. septic tanks;

2. stormwater and wastewater collection systems;

3. flow through process tanks;

4. tanks which hold a volume of 110 gallons or less;

5. tanks which have less than 10% of their volume below the ground surface;

6. residential or farm motor fuel tanks used for noncommercial purposes which have a capacity of 1,100 gallons or less;

7. heating oil storage tanks which contain fuel to be used at the location where they are stored such as residential tanks;

8. storage tanks which are positioned within an underground structure, if they sit above the floor surface (i.e. tank in a basement or vaulted area of powerhouse; Note: special considerations need to be applied to the management of floor drains in these areas);

STATE NOTIFICATION

Your state and/or local UST program office should already have been notified regarding any existing USTs at your facility as called for in 40 CFR Part 280.22.

1. these state offices must be contacted within **30 days** after installing any new USTs. (see Appendix II in 40 CFR Part 280 for a listing of state and local agencies which should receive this notification.)

2. submit an EPA Form 7530-1 to state office, Notice of Existence (can be found in 40 CFR, Part 280, Appendix I) unless your state has a different form.

3. all owners and operators must certify in this notification that compliance has been met on the following requirements:

   (a) tanks and piping were installed according to practices called out in 40 CFR Part 280.20

   (b) steel tanks and piping have been cathodically protected according to 40 CFR Part 280.20 (a) and (b)

   (c) financial responsibility under 40 CFR Part 280 Subpart H has been proven.

   (d) release detection methods under 40 CFR Parts 280.41 and 280.42 have been satisfied.

OLD USTs

Owners and operators must do one of the following for old USTs (installed before 22 December 1988),(40 CFR 280.21):(a))

1. By December 22, 1998 comply with Old UST tank upgrade requirements by adding:

   (a) Spill, overfill and corrosion protection

   (b) Satisfy leak detection requirements;

2. Close the existing UST by December 22, 1998;
   (40 CFR 280.70 to 280.74 Subpart G)

3. Replace the existing UST with a new UST which satisfies the new UST requirements. (40 CFR 280.20)

OLD UST UPGRADE REQUIREMENTS

The basic upgrade requirements for old USTs are located at 40 CFR 280.21. Some of these requirements include but are not limited to the following:

1. Spill Protection(40 CFR 280.21 (d))

2. Must have a catchment basin (§ 280.20(c))

3. Overfill Protection must incorporate one of the following (40 CFR 280.21 (d))

   (a) automatic shutoff devices

   (b) Overfill alarms

   (c) ball float valves

4. Corrosion Protection must have one of the following (40 CFR 280.21 (b))

   (a) corrosion-resistant coating **and** cathodic protection for steel tanks

   (b) a tank made of noncorrodible material (i.e. fiberglass)

   (c) steel tank clad with noncorrodible material **or** tank enclosed in noncorrodible material

   (d) cathodic protection system for an uncoated steel tank

   (e) noncorrodible liner in an uncoated steel tank

   (f) cathodic protection **and** interior liner for an uncoated steel tank.

5. Piping must have one of the following (40 CFR 280.21 (c)):

   (a) uncoated steel piping with cathodic protection

   (b) corrosion-resistant coating **and** cathodic protection

   (c) piping made of (or enclosed in) noncorrodible material

UST CLOSURES

There are different requirements for temporary or permanent UST closures. Temporary enclosures are tanks which are not used for three to 12 months. Permanent closures are tanks which are either closed for over 12 months OR which will no longer be used.

For temporary closures, facilities must:

1. 30 days prior, notify the EPA;
2. empty and clean tank;
3. have vent line opening and functioning
4. cap and secure all other lines, pumps, mainways and ancillary equipment.

For permanent closures, facilities must complete the above temporary closure tasks, as well as:

1. assess site for presence of any release, contaminated soil or free product;
2. perform any necessary corrective actions.
3. remove tank or fill it with an inert solid material;

NOTE: Records of these actions need to be maintained at the facility for **three** years. When engaged is such a project reference the regulations found in 40 CFR 280.70 as well as check with the state to ensure state regulations have also been satisfied.

NEW UST - DESIGN & CONSTRUCTION

All regulated USTs installed after December 22, 1988 must meet the design criteria called for in 40 CFR 280.20. The following outlines these primary design criteria:

1. constructed to retain their structural integrity in accordance with national codes of practice for tanks and piping;♦
2. installed properly according to industry codes; ♦
3. tanks and their attached piping must be protected from external corrosion; *
4. spill and overflow prevention equipment must be installed; *
5. release detection systems must be installed. ¤

♦ for industry codes and standards see 40 CFR Subpart B codes and standards and EPA/530/UST-88/008 Must for USTs (pages 8, 25, 33, 37, 40).

* new tanks at time of installation and existing tanks must be updated by December 22, 1998.

¤ new tanks at installation and all existing tanks by December 1993.

NEW UST INSTALLATION

Owners and operators must ascertain that nationally recognized procedures were followed during tank installation and must describe how this installation was accomplished. <u>For new installation regulations reference 40 CFR 280.20 (d) & (e)</u>:

1. must be installed correctly by using qualified individuals;♦
2. USTs must be installed according with a code of practice developed by a nationally recognized association or independent test laboratory and in accordance with the manufacturer's instructions.

3. certify in the Notice of Existence form (see State Notification section above) that **one or more** of the following methods of certification, testing and inspection were followed for installation: *

   (a) installer has been certified by the tank and piping manufacturers

   (b) installer has been certified or licensed by implementing agency

   (c) installation has been inspected and certified by a registered professional engineer with education and experience in UST system installation

   (d) installation has been inspected and approved by the implementing agency

   (e) all work listed in manufacturer's installation checklists has been completed

♦ see 40 CFR part 280.20 (e) and EPA/530/UST-88/008 Must for USTs (pages 8, 25, 33, 37, 40)

* these forms vary state to state, therefore contact your regulatory authority

UST OPERATION

Facilities also have certain operating responsibilities under 40 CFR Subpart C. Outlined below are the principal requirements called for in these regulations:

1. attempt to prevent spills and overflows (§ 280.30);

2. cleanup and report any spills or overflows which do occur;

3. conduct investigations into how spills occurred (§ 280.53);

4. ensure that proper operation procedures are being followed and that any necessary maintenance is being conducted (eg. for corrosion protection, (§ 280.31);

5. if any UST repairs are necessary, certain requirements must be adhered to for testing the piping, cathodic corrosion protective layer and tank (§ 280.33).

LEAK DETECTION MONITORING REQUIREMENTS FOR PETROLEUM USTs

For existing and **new** tanks, various monthly and yearly monitoring procedures need to be conducted. Tanks need to be checked for leaks at least monthly. To do this, operators must adhere to **ONE** of the following leak detection monitoring regimes:

1. **monthly monitoring**

This involves:

(a) automatic tank gauging

(b) monitoring for vapors in the soil

(c) groundwater monitoring

(d) interstitial monitoring (space between inner and outer tank walls) for tanks of less than 550 gallons, operators are allowed to use **manual tank gauging** to check for leaks.

2. If UST has corrosion protection or internal tank lining and devices that prevent spills and over-spills, can combine **monthly inventory control** with **tank tightness testing** every five years.

3. If UST does not have corrosion protection or internal tank lining and devices that prevent spills and overfills, can combine monthly **inventory control** with **annual tank tightness** testing.

This method is only allowed until December 1998, after which, one of the other two above choices must be used. (as always, check state requirements also!)

For underground pressurized piping must (280.41(b)1**:**

1. conduct annual tightness test or monthly monitoring

2. incorporate automatic leak detector restrictor or alarm system

For suction piping must <u>either</u> conduct (280.41(b)2**:**

1. monthly monitoring

2. line tightness testing every 3 years

Some helpful publications on monitoring are:

- EPA 510-B-93-004 Doing Inventory Control Right
- EPA 510-B-93-005 Manual Tank Gauging
- EPA 530/UST-90/012 Straight Talk on Tanks

For clarification of what is required by the various monitoring procedures and tests, please reference the sections in 40 CFR listed below:

Methods of Release Detection	**40 CFR PART**
Inventory Control	280.43(a)
Manual Tank Gauging	280.43(b)
Tank Tightness Testing	280.43(c)
Automatic Tank Gauging	280.43(d)
Vapor Monitoring	280.43(e)
Ground Water Monitoring	280.43(f)
Interstitial Monitoring	280.43(g)
Automatic Line Leak Detectors	280.44(a)
Line Tightness Testing	280.44(b)

LEAK DETECTION MONITORING REQUIREMENTS FOR HAZARDOUS SUBSTANCE USTs

USTs which contain hazardous substances are subject to all the same requirements as petroleum USTs (§ 280.41) as well as additional requirements (§ 280.42 (b)).

- secondary containment for USTs and their underground piping
- interstitial monitoring for USTs
- automatic leak detector for underground piping which is transferring a regulated substance.

REPORTING & RECORDKEEPING

Reporting

The following items must be reported to the regulatory agency (§280.34 (a)):

- notification for all UST systems including certification of installation
- reports of releases **including**:
  - suspected releases
  - spills and overfills
  - confirmed releases
- corrective actions planned or taken **including**:
  - initial abatement measures
  - initial site characterization
  - free product removal
  - investigation of soil and ground-water cleanup
  - corrective action plan
- notification of permanent closure or change in service.

Recordkeeping

Owners and operators must maintain the following records (§280.34(b))

- corrosion expert's analysis of site corrosion potential if corrosion protection equipment is not used;
- documentation of operation of corrosion protection equipment
- documentation of UST system repairs
- recent compliance with release detection requirements
- results of the site investigation conducted at permanent closure

TANK MANAGEMENT DEFINITIONS

Aboveground Release:

Any release to the surface of the land or to surface water. This includes, but is not limited to, releases from the aboveground portion of an UST system and aboveground releases associated with overfills and transfer operations as the regulated substance moves to or from an UST system.

Below-ground Release:

Any release to the subsurface of the land and to groundwater. This includes, but is not limited to, releases from the below-ground portions of an underground storage tank system and below-ground releases associated with overfills and transfer operations as the regulated substance moves to or from an underground storage tank.

Cathodic Protection:

Is a technique to prevent corrosion of a metal surface by making that surface the cathode of an electrochemical cell. For example, a tank system can be cathodically protected through the application of either galvanic anodes or impressed current.

Hazardous Substance UST System

An underground storage tank system that contains a hazardous substance defined in section 101(14) of CERCLA (but not including any substance regulated as a hazardous waste under subtitle C) or any mixture of such substances with petroleum, and which is not a petroleum UST system.

Petroleum UST System

An underground storage tank system that contains petroleum products. Such systems include those containing motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, and used oils.

Regulated Substance

(1) any substance defined in section 101(14) of CERCLA (but not including any substance regulated as a hazardous waste under subtitle C; and

(2) petroleum, including crude oil or any fraction thereof that is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute).

The term regulated substance includes but is not limited to petroleum and petroleum-based substances comprised of a complex blend of hydrocarbons derived from crude oil through processes of separation, conversion, upgrading, and finishing, such as motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents and used oil.

UST Checklist

40 CFR	UST Requirements
280.20	
280.21	design
	new
	old
280.20(b)	construction
280.20(a)	tanks
	piping
280.20 (d) & (e)	installation
280.22	notification
280.30 to 280.33	operating
280.40 to 280.44	release detection
280.32	compatibility
280.50 to 280.53	release reporting, investigation and confirmation
280.34(b) and 280.45	recordkeeping
280.34(a) and 280.50	reporting
280.60 to 280.65	release response
280.66 to 280.67	corrective action
Subpart H	financial responsibility
280.70 to 280.74	closure

WHAT DO YOU HAVE TO DO? Minimum Requirements

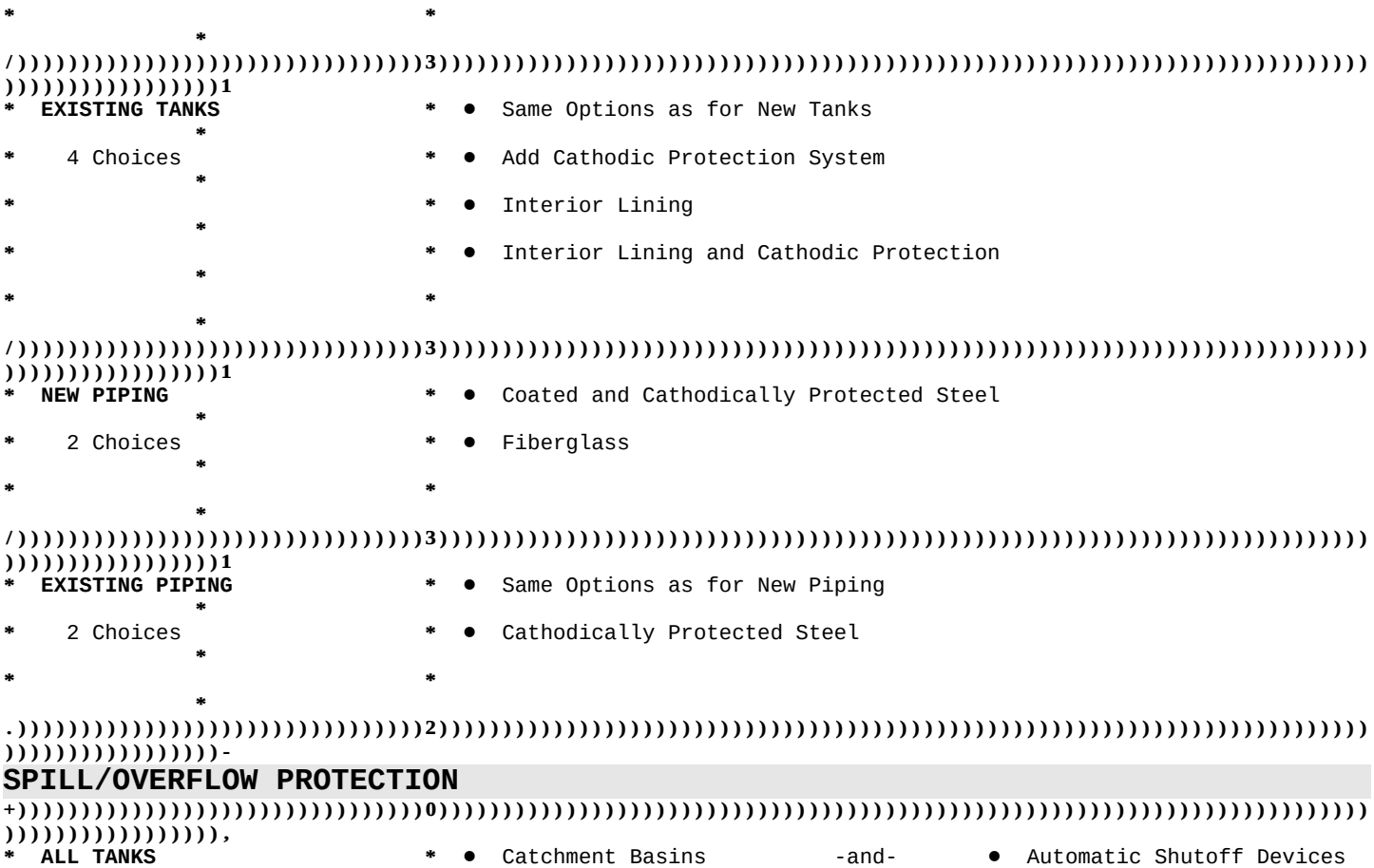
You must have Leak Protection, Corrosion Protection, and Spill/Overflow Prevention. For WHEN you have to add these to your tank system, see chart on the right.

LEAK PROTECTION

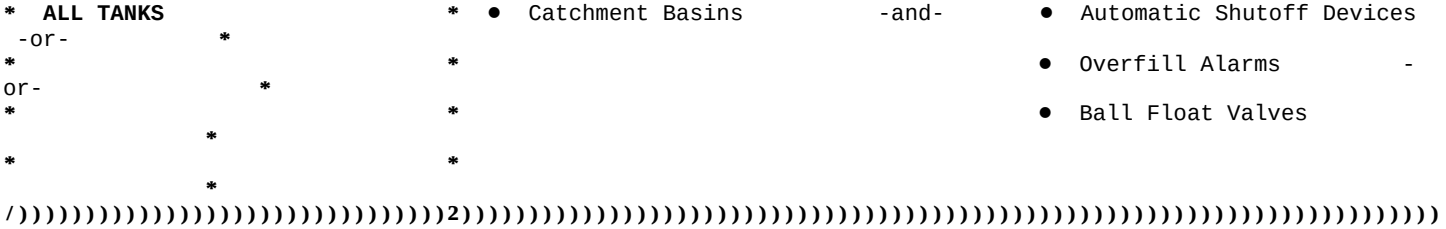
NEW TANKS	• Monthly Monitoring*	
2 Choices	• Monthly Inventory Control and Tank Tightness Testing Every 5 Years	
	(You can only use this choice for 10 years after installation.)**	
EXISTING TANKS	• Monthly Monitoring*	
3 Choices	• Monthly Inventory Control and Tank Tightness Testing	
	(This choice can only be used until December 1998.)	
The Chart at the bottom of the next page displays these choices**	• Monthly Inventory Control and Tank Tightness Testing Every 5 Years (This choice can only be used for 10 years after adding corrosion protection and spill/overfill prevention or until December 1998, whichever date is later)**	
NEW & EXISTING PRESSURIZED PIPING	• Automatic Flow Restrictor -and- • Automatic Shutoff Device -and- • Continuous Alarm System	• Annual Line Testing • Monthly Monitoring* (except automatic tank gauging)
Choice of one from each set		
NEW & EXISTING SUCTION PIPING	• Monthly Monitoring* (except automatic tank gauging)	
3 Choices	• Line Testing Every 3 Years	
	• No Requirements	
	(If the system has the characteristics described in the final regulations)	

CORROSION PROTECTION

NEW TANKS	• Coated and Cathodically Protected Steel
3 Choices	• Fiberglass
	• Steel Clad Tank With Fiberglass



SPILL/OVERFLOW PROTECTION



* Monthly Monitoring includes: Automatic Tank Gauging, Ground Water Monitoring, Vapor Monitoring, Other Approved Methods, Interstitial Monitoring

** Very small tanks may also be able to use manual tank gauging (see page 35)

Source: U.S. Environmental Protection Agency, Office of Underground Storage Tanks
"Must for UST's: A Summary of the New Regulations for Underground Storage Tank Systems," September 1988.

WHEN DO YOU HAVE TO ACT? Important Deadlines

For WHAT you have to do, see the chart on the left

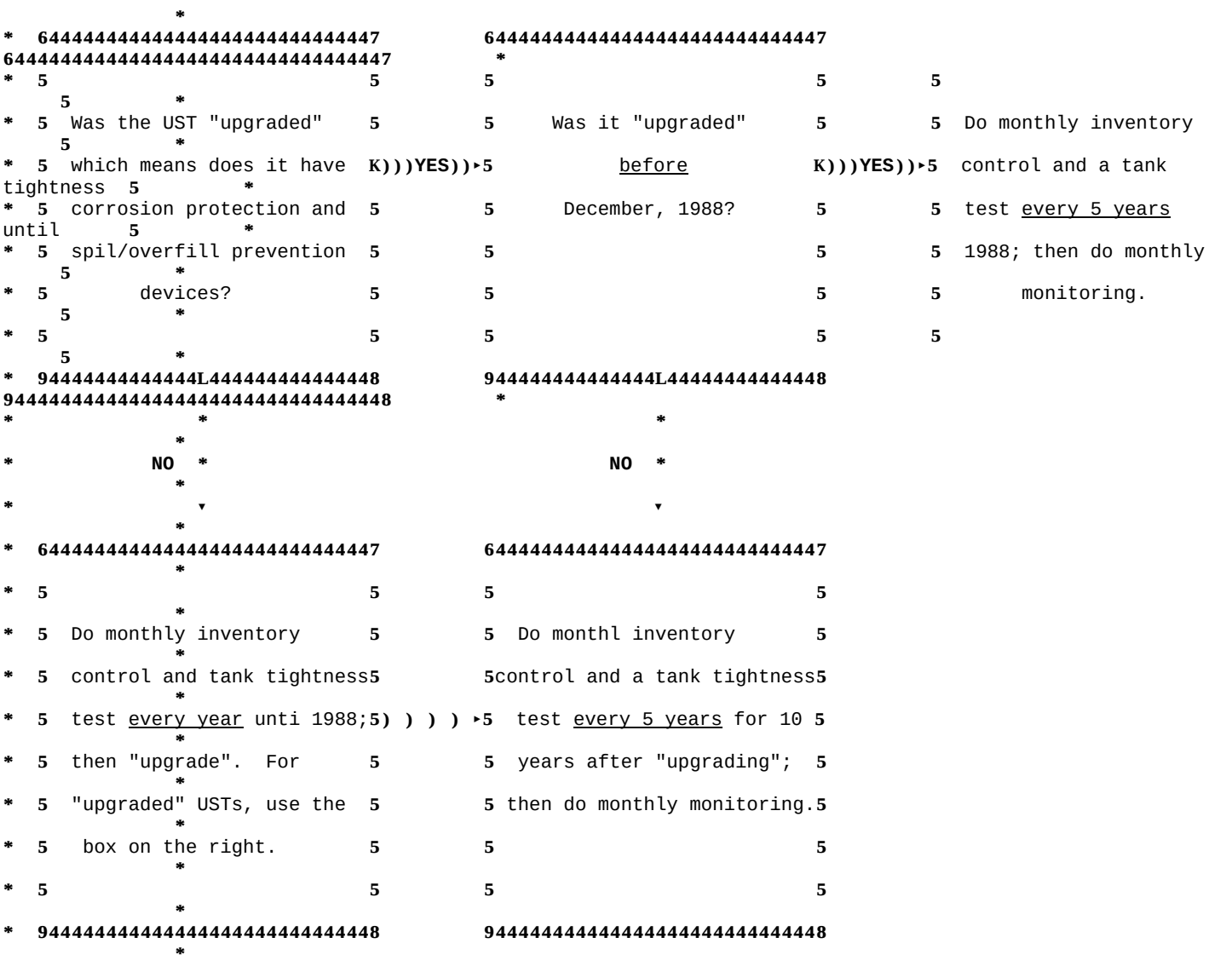
TYPE OF TANK & PIPING	LEAK DETECTION	CORROSION PROTECTION	SPILL/OVERFILL PREVENTION
New Tanks and Piping*	At Installation	At Installation	At Installation
Existing Tanks**			
Installed:	By NO Later Than:		
Before 1965 or unknown	December 1989		
1965 - 1969	December 1990	December 1998	December 1998
1970 - 1974	December 1991		
1975 - 1979	December 1992		
1980 - December 1988	December 1993		
Existing Piping**			
Pressurized	December 1990	December 1998	Does Not Apply
Suction	Same as existing tanks	December 1998	Does Not Apply

* New tanks and piping are those installed after December 1988

** Existing tanks and piping are those installed before December 1988

IF YOU CHOOSE TANK TIGHTNESS TESTING AT EXISTING USTs...

* If you don't use monthly monitoring at existing USTs, you must use a combination of periodic tank tightness tests and
* monthly inventory control. This combined method can only be used for a few years, as the chart below displays.



Source: U.S. Environmental Protection Agency, Office of Underground Storage Tanks
"Must for UST's: A Summary of the New Regulations for Underground Storage Tank Systems," September 1988.

United States
Environmental Protection Agency
Washington, DC 20460

EPA

* Form Approved.
* OMB No. 2050-0068
*Approval Expires 3/31/98

Notification for Underground Storage Tanks

State Agency Name and Address: * STATE
USE ONLY

* ID NUMBER:

* DATE RECEIVED:

TYPE OF NOTIFICATION * A. Date Entered Into Computer ____________

* B. Data Entry Clerk Initials ____________

+), A. NEW FACILITY * +), B. AMENDED * +), C. CLOSURE * C. Owner Was Contacted to Clarify Responses.

Comments:

_____ No. of tanks at facility * _____ No. of continuation sheets attached *

INSTRUCTIONS *

Please type or print in ink all items except "signature" in section V. This form must be completed for each location containing underground storage tanks. If more than five (5) tanks are owned at this location, photocopy the following sheets, and staple continuation sheets to the form.

GENERAL INFORMATION

Notification is required by Federal law for all underground tanks that have been used to store regulated substances since January 1, 1974, that are in the ground as of May 8, 1986, or that are brought into use after May 8, 1986. The information requested is required by Section 9002 of the Resource Conservation and Recovery Act, (RCRA), as amended.

The primary purpose of this notification program is to locate and evaluate underground tanks that store or have stored petroleum or hazardous substances. It is expected that the information you provide will be based on reasonably available records, or in the absence of such records, your knowledge, belief, or recollection.

Who Must Notify? Section 9002 of RCRA, as amended, requires that, unless exempted, owners of underground tanks that store regulated substances must notify designated State or local agencies of the existence of their tanks. Owner means--

a) in the case of an underground storage tank in use on November 8, 1984, or brought into use after that date, any person who owns an underground storage tank used for storage, use, or dispensing of regulated substances, and

regulated under the Hazardous Liquid pipeline facility

related to oil or

area (such as a tunnel) if the storage tank

requirements apply to substances. This

Section 101 (14) of the Liability Act

regulated as also includes petroleum, liquid at standard

3. septic tanks
4. pipeline facilities (including gathering lines) Natural Gas Pipeline Safety Act of 1968, or the Pipeline Safety Act of 1979, or which is an intrastate regulated under State laws;
5. surface impoundments, pits, ponds, or lagoons;
6. storm water or waste water collection systems;
7. flow through process tanks;
8. liquid traps or associated gathering lines directly gas production and gathering operations;
9. storage tanks situated in an underground basement, cellar, mineworking, drift, shaft, or is situated upon or above the surface floor.

What Substances Are Covered? The notification underground storage tanks that contain regulated includes any substance defined as hazardous in Comprehensive Environmental Response, Compensation and of 1908 (CERCLA), with the exception of those substances hazardous waste under Subtitle C of RCRA. It e.g., crude oil or any fraction thereof which is conditions of temperature and pressure (60

degrees Fahrenheit and 14.7 pounds per square inch absolute).

b) in the case of any underground storage tank in use before November 8, 1984, but no longer in use after that date, any person who owned such a tank immediately before discontinuation of its use.

c) if the State so requires, any facility that has undergone any changes to facility information or tank system status (only amended tank information needs to be included).

What Tanks Are Included? Underground storage tank is defined as any one or combination of tanks that (1) is used to contain an accumulation of "regulated substances," and (2) whose volume (including connected underground piping) is 10% or more beneath the storage tanks in use or ground. Some examples are underground tanks storing: **1**. Gasoline, used 1974, but still in oil or diesel fuel, and **2**. industrial solvents, pesticides, herbicides or Owners who bring fumigants. must notify

3. If the State requires

What Tanks Are Excluded? Tanks removed from the ground are not information to State subject to notification. Other tanks excluded from notification are:

1. farm or residential tanks of 1,100 gallons or less capacity used for notify or submits false storing motor fuels for noncommercial purposes; not to exceed $10,000 for

2. tanks used for storing heating oil for consumptive use on the which false premises where stored;

Where To Notify? Send Completed forms to:

When To Notify? 1. Owners of underground that have been taken out of operation after January 1, the ground, must notify by May 8, 1986. **2**. underground storage tanks into use after May 8, 1986, within 30 days of bringing the tanks into use. notification of any amendment to facility, send agency immediately.

Penalties: Any owner who knowingly fails to information shall be subject to a civil penalty each tank for which notification is not given or for information is submitted.

I. OWNERSHIP OF TANKS(S)

Owner Name (Corporation, Individual, Public Agency, or Other Entity)

Street Address
*if same as Section 1

*mark box here +

City *State *Zip Code

County
*Zip Code

Phone Number (include area code)

II. LOCATION OF TANK(S)

*If required by State, give the geographic location of tanks by

42,36,12N Long 85,24,17W

*degrees, minutes, and seconds.(E.g.Lat

*

* Latitude_____ Longitude__

*Facility Name of Company Site Identifier,

*as Applicable

*

*Street Address

*

*City *State

*County *Municipality

United States * Form Approved.
EPA **Environmental Protection Agency** * OMB No. 2050-0068
Washington, DC 20460 *Approval Expires 3/31/98

Notification for Underground Storage Tanks

III. TYPE OF OWNER * IV. INDIAN LANDS

+), Federal Government
.)-
+), State Government
.)-
+), Local Government
.)-

+), Commercial
.)-
+), Private
.)-

*Tanks are located on land within an Indian Tribe or Nation:
*Reservation or on other trust lands. +),
* .)-
*Tanks are owned by native American nation,
*tribe, or individual. +),
* .)-

V. TYPE OF FACILITY

+), Gas Station .)-	+), Railroad .)-	+), Trucking/Transport .)-
+), Petroleum Distributor .)-	+), Federal - Non-Military .)-	+), Utilities .)-
+), Air Taxi (Airline) .)-	+), Federal - Military .)-	+), Residential .)-
+), Aircraft Owner .)-	+), Industrial .)-	+), Farm .)-
+), Auto Dealership .)-	+), Contractor .)-	+), Other (Explain) _____ .)-

VI. CONTACT PERSON IN CHARGE OF TANKS

Name: (Include Area Code):	* Job Title:	* Address:	* Phone Number
	*	*	*
	*	*	*
	*	*	*

VII. FINANCIAL RESPONSIBILITY

+), I have met the financial responsibility requirements in
.)- accordance with 40 CFR Subpart H

Check all that apply

+), Self Insurance .)-	+), Guarantee .)-	+), State Fund .)-
+), Commercial Insurance .)-	+), Surety Bond .)-	+), Trust Fund .)-
+), Risk Retention Group Allowed - .)-	+), Letter of Credit .)-	+), Other Method .)- Specify

VIII. CERTIFICATION (Read and sign after completing all sections)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Name and official title of owner or owner's authorized representative (Print)	* Signature	* Date Signed
	*	*
	*	*
	*	*
	*	*

Paperwork Reduction Act Notice

EPA estimates public reporting burden for this form to average 30 minutes per response including time for reviewing instructions, gathering and maintaining the data needed and completing and reviewing the form. Send comments regarding this burden estimate to Chief, Information Policy Branch (2136), U.S. Environmental Protection Agency, 401 M Street, Washington, D.C. 20460, marked "Attention Desk Officer for EPA." This form amends the previous notification form as printed in 40 CFR Part 280, Appendix I. Previous editions of this notification form may be used while supplies last.

United States * Form Approved.
EPA **Environmental Protection Agency** * OMB No. 2050-0068
Washington, DC 20460 *Approval Expires 3/31/98

Notification for Underground Storage Tanks

IX. DESCRIPTION OF UNDERGROUND STORAGE TANKS (Complete for each tank at this location)

Tank Identification Number	Tank No. _____	Tank No. _____	Tank No. _____	Tank No. _____	Tank No. _____
1. Status of Tank (Mark only one)					
Currently In Use					
Temporarily Out of Use					
Permanently Out of Use					
Amendment of Information					
2. Date of Installation (mo/year)					
3. Estimated Total Capacity (gallons)					
4. Material of Construction					
(Mark all that apply)					
Asphalt Coated or Bare Steel					
Cathodically Protected Steel					
Epoxy Coated Steel					
Composite (Steel with Fiberglass)					
Fiberglass Reinforced Plastic					
Lined Interior					
Double Walled					
Polyethylene Tank Jacket					
Concrete					
Excavation Liner					
Unknown					

Other, Please Specify					
Has Tank Been Repaired?					
5. Piping (Material)					
(Mark all that apply) Bare Steel					
Galvanized Steel					
Fiberglass Reinforced Plastic					
Copper					
Cathodically Protected					
Double Walled					
Secondary Containment					
Unknown					
Other, Please Specify					
6. Piping (Type)(Mark all that apply)					
Suction: no valve at tank					
Suction: valve at tank					
Pressure					
Gravity Fed					
Has piping been repaired?					

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Notification for Underground Storage Tanks

Tank Identification Number	Tank No. _____	Tank No. _____	Tank No. _____	Tank No. _____
7. Substance Currently or Last Stored in Greatest Quantity by Volume				
Gasoline				
Diesel				
Gasohol				
Kerosene				
Heating Oil				
Used Oil				
Other				
Please Specify	_____	_____	_____	_____
Hazardous Substance				
CERCLA name and/or	_____	_____	_____	_____
CAS number	_____	_____	_____	_____
Mixture of Substances				
Please Specify	_____	_____	_____	_____

X. TANKS OUT OF USE, OR CHANGE OF SERVICE

1. Closing of Tank (mo/day/year)				
A. Estimated date last used				
B. Estimated date tank closed (mo/day/year)				
C. Tank was removed from ground	+),	+),	+),	+),
	.)-	.)-	.)-	.)-
D. Tank was closed in ground	+),	+),	+),	+),
	.)-	.)-	.)-	.)-
E. Tank was filled with inert material	+),	+),	+),	+),
	.)-	.)-	.)-	.)-
Describe				
F. Change is service	+),	+),	+),	+),
	.)-	.)-	.)-	.)-
2. Site Assessment Completed	+),	+),	+),	+),
	.)-	.)-	.)-	.)-
Evidence of a leak detected	+),	+),	+),	+),
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United States Environmental Protection Agency
Washington, DC 20460

Form Approved.
OMB No. 2050-0068
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Notification for Underground Storage Tanks

XI. CERTIFICATION OF COMPLIANCE (COMPLETE FOR ALL NEW AND UPGRADED TANKS AT THIS LOCATION)

Tank Identification Number	Tank No. _____	Tank No. _____	Tank No. _____	Tank No. _____	Tank No. _____
1. Installation					
A. Installer certified by tank and piping manufacturers					
B. Installer certified or licensed by the implementing agency					
C. Installation inspected by a registered engineer					
D. Installation inspected and approved by implementing agency					
E. Manufacturer's installation checklists have been completed					
F. Another method allowed by State agency. Please specify					

2. Release detection (Mark all that apply)	TANK	PIPING	TANK	PIPING	TANK	PIPING	TANK	PIPING	TANK	PIPING
A. Manual tank gauging										
B. Tank tightness testing										
C. Inventory controls										
D. Automatic tank gauging										

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OATH: I certify the information concerning installation that is provided in section XI is true to the best of my belief and knowledge.

Installer: ______________________________ ___________________________________ __________________

Name Signature Date

____ ______________________________ ______

Position Company

ABOVEGROUND STORAGE TANKS (ASTs)

Several environmental laws affect the management of ASTs and are as follows CWA, CAA, CERCLA/EPCRA.

In addition, several states have their own specific laws regarding ASTs (eg. New York and Florida).

APPLICABLE TANKS

Tanks which cannot be classified as underground storage tanks, are aboveground storage tanks.

APPLICABLE LAWS FOR BOTH ASTs & USTS

CERCLA See Chapters II and IV to determine how this act affects ASTs and USTs.

EPCRA See Chapters II and IV to determine how this act affects ASTs.

NOTE: Tanks which contain petroleum products and are used at facilities for holding vehicle fleet fuels, fuels to operate powerhouse boilers, and emergency generators are exempt from EPCRA's TRI (Form R) reporting requirements. These materials would, however, be reportable under EPCRA's Tier I & Tier II process.

This exemption may change if EPA decides to include flammable and combustible materials on its EHS list. Check with local regulatory agency for future changes.

CWA

- Both the Spill Prevention, Control and Countermeasure (SPCC) Plan and the Oil Pollution Act of 1990 (OPA) affect USTs and ASTs

NOTE: see Emergency Planning Section below and Chapters III and IV.

- NPDES regulations can effect tank management and reporting if there are releases from tank dikes following rainfall or a snow melt.

CAA

- Be sure to include tanks in your facility's air pollution control operations document. This document must be kept on file and contain compliance information on all sources (see Chapter VIII, Air Resources).

Since most underground storage tanks (USTs) are quite small in relation to aboveground storage tanks (ASTs), many of the CAA emissions requirements do not affect USTs.

However, the CAA does impact many USTs through their stage II controls involving refueling requirements (see Chapter VIII - Air Resources Management, Mobile Sources.

(1) **New Source Performance Standards (NSPS)**

There are NSPSs for VOCS emitted by stationary sources such as petroleum liquid storage vessels and bulk gasoline terminals.

- These NSPS standards apply to new and modified tanks.
- There are separate requirements for **storage tanks** depending upon when they were built. The categories are:
  - built after June 11 1973 and before May 19, 1978 (40 CFR 60, Subpart K)
  - built after May 19, 1978 and before July 23, 1984 (40 CFR 60, subpart Ka)
  - built after July 23, 1984 (40 CFR 60, Subpart Kb)

These requirements include such things as:

- vapor recovery systems
- floating roofs
- closed venting systems

(40 CFR Ka and Kb vessels **MUST** have a closed vent system which has a 95% effective vapor recovery control device.)

Note: Tanks which are below a certain size need not adhere to these requirements. These threshold amounts are as follows:

- 40,000 gallons for volatile organic liquids with a maximum vapor pressure of at least 5.2 kPa (0.75 psia) and less than 76.6 kPa (11.1 psia);

- 20,000 gallons for petroleum liquids with a maximum true vapor pressure greater than or equal to 27.0 kPa (4.0 psia) and less than 76.6 kPa (11.1 psia);

- 20,000 gallons for petroleum liquids with a maximum true vapor pressure greater than or equal to 76.6 kPa (11.1 psia).

◦ For **bulk gasoline terminals**, the VOC regulations apply for vessels built, reconstructed or modified after December 17, 1980 (and with certain conditions, after August 19, 1983). (40 CFR 60, Subpart XX) these regulations are:

> require vapor collection systems
> limits on emissions from the collection systems

(2) **National Ambient Air Quality Standards (NAAQS)**

In order to achieve NAAQS in non-attainment areas for ground-level ozone, facilities may have to control for VOCs emitted from storage tanks.

To satisfy NAAQS, facilities may have to achieve the Lowest Achievable Emissions Rate (LEAR), use Reasonably Available Control Technology (RACT) or Best Available Control Technology (BACT).

A RACT which is applicable to storage tanks is the control technique guideline (CTG) entitled Control of VOC Emissions from Volatile Organic Liquid Storage

Tanks. This guideline covers volatile organic liquid tanks with:

- fixed roofs
- internal floating roofs
- external floating roofs

CTG requirements for VOC emissions are almost identical to the NSPS requirements.

Depending on the amount of VOCs emitted by the vessel, it is considered major if it emits:

- 100 tons/year in a NAAQS designated moderate zone
- 50 tons/year in serious zones
- 25 tons/year in severe zones
- 10 tons/year in extreme zones
- 50 tons/year in ozone transport zones

(3) **Air Toxics Compliance (NESHAP)**

Tanks which store any of the 189 designated hazardous air pollutants (HAP) **and** are in one of the EPA's 174 designated source categories, may be subject to complying with maximum achievable technology (MACT) or generally available control technology (GACT).

Air Toxics also requires plans and precautions for preventing sudden and catastrophic HAP accidental releases. The EPA has a list of substances (100 EPA listed substances and any extremely hazardous substances) which require new controls and risk management plans if your facility exceeds the threshold planning quantity (TPQ) for that material.

For more information on NESHAP see Chapter VIII, Air Resources Management.

RCRA

- Covers Subtitle C hazardous wastes stored in tanks (See Chapter XI, Hazardous Waste Management).

  There are five operating requirements for tanks containing Subtitle C wastes (40 CFR 265 subpart J):

  - tank assessments
  - secondary containment & release detection
  - operating & maintenance requirements
  - proper release response
  - tank closure and post-closure requirements

- There are specific requirements for used oil storage tanks:

  - operating conditions
  - secondary containment
  - contingency plans
  - release response

OSHA The main component of OSHA which directly affects storage tanks are the standards covering flammable and combustible liquids. Other sections affect storage tanks indirectly such as OSHA's Hazard Communication Program (29 CFR 1910.1200), Process Safety Management Program (29 CFR 1910.119) and HAZWOPER (29 CFR 1900.120) standards (see Chapter VI - Employee and Worker Protection).

NOTIFICATION

CAA **Under NSPS**

- For new and modified tanks,
  - within 30 days, must notify EPA of:
    - > construction commencement
    - > **anticipated** start-up date
  - within 15 days, must notify EPA (again) of:
    - > **actual** start-up date
  - within 60 days after maximum production is reached **OR** within 100 days after initial start-up:
    - > a performance test must be conducted and a written report sent to the EPA.
- For any changes which will result in increased emissions (i.e. operational or physical alterations),
  - within 60 days, must notify EPA

MONITORING REQUIREMENTS

CAA If your facility has any storage tanks which are covered by the New Source Performance Standards, then:

- seals of the external floating roof must be inspected for signs of wear such as holes or tears, before filling the tank with petroleum or volatile organic liquids.
- gaps of the external floating roof must be measured between the seals and the container wall.
  - Within 60 days after petroleum substances are first placed in a tank, both the primary and secondary seal gaps must be measured.
  - Every 12 months, secondary seal gap measurements must be taken.

- At least once every five years, primary seal gap measurements must be taken.

- If any gaps are not within specification, then repairs must be done **OR** the tank must be emptied within 45 days.

EMERGENCY SPILL PLANS for TANKS

(1) If a facility has... :

- total underground storage capacity of more than 42,000 gallons;

- an aboveground aggregate storage capacity of more than 1,320 gallons;

- any single ASTs with a capacity of more than 660 gallons;

... it is subject to emergency planning by the Spill Prevention, Control and Countermeasure (SPCC) plan and the Oil Pollution Act (OPA) (See Chapters III and IV).

(2) Tanks may also experience a HAZWOPER, EPCRA or RCRA emergency release, see Chapter IV.

UST and AST Planning Worksheet

Information and Activities
* Maintain a record of the number of USTs and ASTs which are present on the facility grounds.
* Notify state office of any new USTs within 30 days after installation.
* Notify EPA of any new ASTs or any AST modifications (see Notification section above for schedule).
* Maintain a record listing the capacity, type of contained substance and type of construction for each tank.
* Develop a compliance schedule to ensure that all USTs meet the 22 December 1998 required deadline.
* Make sure that tanks comply with: RCRA section I, CWA (SPCC and OPA Plans), CAA (NSPS, NAAQS, NESHAPS), CERCLA, EPCRA and OSHA **where applicable**.
* Implement tank monitoring and operation procedures for the facility. Inspect spill control, leak detection and data monitoring equipment as required.

III. EMERGENCY PLANNING

APPLICABLE LAWS

The environmental statutes listed below all incorporate requirements for emergency planning and emergency notification:

CERCLA Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980

EPCRA Emergency Planning and Community Right-to-Know Act of 1986, also known as Title III of the Superfund Amendments and Reauthorization Act (SARA)

RCRA Resource Conservation and Recovery Act of 1976

CAA Clean Air Act

CWA Clean Water Act

OSHA Occupational Safety and Health Act of 1970

HAZWOPER Hazardous Waste Operations and Emergency Response program.

ASSOCIATED PLANS

CERCLA • HAZWOPER (see OSHA below)

OSHA was required by the Superfund Amendments and Reauthorization Act (SARA), Title I, to promulgate standards for the protection of employee health and safety during the release of hazardous substances. This resulted in OSHA producing section 1910.120 (q) entitled Hazardous Waste Operations and Emergency Response (HAZWOPER). (40 CFR Part 311; 29 CFR Part 1910.120 a(v);

EPCRA • Emergency Response Plan

In Title III of the Superfund Amendments and Reauthorization Act (this section of SARA is entitled EPCRA), the Governors of each State are directed to appoint a State Emergency Response Commission (SERC),

which in turn is to appoint and coordinate the activities of Local Emergency Planning Committees (LEPC). The LEPC must develop a community emergency response plan that contains emergency response methods and procedures to be followed by facility owners, local emergency responders, and emergency medical personnel. (SARA Title III, EPCRA Section 302, 40 CFR part 355.30)

- **HAZWOPER (see OSHA below)**

  EPCRA addresses the safety of the surrounding community during a hazardous substance release. HAZWOPER addresses the safety and health of the employees responding to this EPCRA release situation. (40 CFR Part 311; 29 CFR Part 1910.120 a(v)

RCRA

- Preparedness and Prevention Plan
  (40 CFR part 265 subpart C*)

- Contingency Plan
  (40 CFR part 265 subpart D*; must comply with 66265.50-56 of the Health and Safety Code)

Large quantity generators are required to have a RCRA Contingency plan.

* **NOTE**: although 40 CFR part 265 covers hazardous waste Treatment, Storage and Disposal Facilities, which most of our facilities are not, subsection C does apply to both Small and Large Quantity Generators which our facilities are. (262.34 (a)(4) and (d)(4))
Likewise, subsection D applies to those facilities of ours which are classified as Large Quantity Generators. (262.34 (a)(4)

- Safety and Emergency Plan

  This type of emergency plans apply to the Small Quantity Generators and below. (40 CFR part 262.34 (d)(5))

For more information on either RCRA Preparedness and Prevention, Contingency or Safety and Emergency plans, see Chapter XI, Hazardous Waste Management.

- HAZWOPER (see later in this chapter OSHA below) (29 CFR Part 1910.120 (a)(iii) & (v))

CWA

- Spill Prevention, Control and Countermeasure (SPCC) Plan Requires Oil Pollution Prevention (OPP) Plans. Focuses on procedures to prevent and control oil spills. (CWA Section 311; 40 CFR Part 112)

- Oil Pollution Act (OPA) of 1990

  (Section 4202; Public Law 101-380, 104 Stat. 484; The Oil Pollution Act of 1990 amended section 311 of the CWA.)

  Requires facility response plans. Focuses on reactive measures (eg. how facility personnel are to respond to a discharge) during an emergency situation.

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5    NOTE:  The Oil Pollution Act should not be applicable to   5
5           BOP facilities as its intent is to regulate large   5
5           petroleum terminals and transportation operations.  5
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See Chapter VII - Water Resources Management, Oil Pollution Prevention for more information regarding SPCC and OPA.

CAA

- Risk Management Program (CAA Section 112[r])

- Risk Management Plan (CAA Section 112[r])

These are accidental release prevention regulations. At time of publication, they were not yet finalized. However, they may go beyond EPA EPCRA requirements.

NOTE: As of January 1995, both were still proposed regulations. However, for the Risk Management Program, facilities will have a compliance deadline of 1997. For this reason the Final Rule should be tracked.

As proposed, Risk Management Plans will need to be completed three years following promulgation of this rule OR three years after a regulated substance above the threshold is used within a facility.

OSHA

- Emergency Response Plan

  (Called for under OSHA's HAZWOPER program)
  (29 CFR 1910.120 a(v) and (q))

  This plan applies to operations which could experience a hazardous chemical release requiring emergency response actions.

  If a BOP facility uses hazardous chemicals, but does not have an Emergency Response Plan, the facility must be able demonstrate to EPA that the chemicals and quantities used in the facility will not develop into an emergency incident if released in a worse-case scenario.

  If your facility is covered by an EPCRA emergency response plan which meets the requirements of HAZWOPER, you will not need to develop a separate HAZWOPER emergency response plan (1910.120 (q) (1st paragraph) & (2)(xii)).

  For more information on HAZWOPER see Chapter VI, Employee and Worker Protection.

EXTREMELY HAZARDOUS SUBSTANCE (EHS) IDENTIFICATION

As of April 1992, there were 360 extremely hazardous substances (EHSs) covered by EPCRA (40 CFR 355.20).

A listing of these substances and their TPQs can be found in:

- 40 CFR Part 355 Appendices A and B;
- EPA's Title III List of Lists;

THRESHOLD PLANNING QUANTITY (TPQ)

The threshold planning quantities (TPQ) for the various extremely hazardous substances (EHSs) are provided in 40 CFR Part 355 Appendices A and B.

CONTENTS OF ENVIRONMENTAL PLANS

EPCRA **Emergency Response Plans** (40 CFR 355.30 (b))

If your facility is subject to emergency planning under EPCRA, follow the steps in the EPCRA Emergency Planning Worksheet later in this chapter to implement your emergency plan*.

The facility subject to EPCRA emergency planning requirements must provide notification to the SERC that it is a facility subject to these regulations.

The facility must designate a representative who will participate in the local emergency planning process as a facility emergency response coordinator. The facility must notify the LEPC of the facility representative.

The facility must inform the LEPC of any changes occurring at the facility which may be relevant to emergency planning.

The LEPC shall, upon request, be provided with information necessary for development or implementation of the local emergency plan by the facility.

NOTE: even if your facility is not subject to the emergency planning portion of EPCRA, it still needs to comply with EPCRA's emergency response section, TRI, and the Tier I & II portions.

RCRA

- **Preparedness and Prevention Plans** are required in order to prevent or minimize the effects of a fire explosion or unplanned release (40 CFR 265.31 - 265.37) .

  Plan must contain:

  > arrangements with local authorities
  > location of emergency equipment
  > maintenance and testing schedule for emergency equipment

- **Contingency plans** must address the necessary actions which need to be taken by the facility in case of a fire, explosion or unplanned release into the environment (air, water, soil) (Ref. 40 CFR 265.52).

  Plan must contain:

  > actions which personnel must take in response to a fire, explosion or unplanned release.
  > describe plans made with local authorities
  > designate an emergency coordinator, supplying names, phone numbers and addresses
  > an emergency equipment listing
  > evacuation plans

- **Safety and Emergency Plan** (40 CFR 262.34 (d)(5))

  Plan must contain:

  > phone numbers of Emergency Coordinator, Fire Department
  > location of emergency equipment
  > employee training
  > proper actions to implement in case of a fire, explosion or other release

See Chapter IX for more detailed information on Preparedness and Prevention, Contingency and Safety and Emergency plans.

CWA • **Spill Prevention, Control and Countermeasure Plan** (40 CFR 112.3 - 112.5 and 122.7)

Reference: Environmental Advisory dated 8/11/94
Subject: Spill Prevention Control and Countermeasure Plans (SPCC)

- plan must be completed within **six months** after operations commence
- plan must be implemented within **12 months** after operations commence
- plan must be consistent with the National Contingency Plan (NCP) and area contingency plans and must cover:
  - plant information;
  - designate a person responsible for oil spill prevention;
  - spill prevention, containment and countermeasures;
  - inspections ;
  - training;
  - spill reporting;
  - equipment and operations;
  - plan review, amendment and certification.
  - plan must be reviewed and certified by a **registered professional engineer**
- plan must be kept on file and available for EPA review
- plan must be updated if their are any facility operation or construction changes.
- SPCC also has special reporting requirements for facilities with a spill history.

- if the facility has experienced one or more spills in the 12 months before being subject to SPCC regulations, it must have a record describing the event and corrective actions which were taken. This document must also address how such an occurrence will be prevented in the future.

- The **registered professional engineer** must:

  > be familiar with 40 CFR Part 112 (Oil Spill Prevention);

  > have examined the facility ;

  > be a registered professional engineer in at least one state;

  > need not be registered in the state in which the facility is located;

  > include their name, registration number and state registration as part of the SPCC plan (Section 112.3);

  > have their engineer's seal affixed to the Plan as part of the certification.

OSHA

- Components of the **HAZWOPER emergency response plan** are*: (29 CFR 1910.120 (q)(1))

  • to conduct a site analysis in order to identify any potential workplace hazards involving hazardous substances.

  • once hazards have been identified, employers must determine what measures need to be taken to protect their employees (i.e. protective equipment, work practices, monitoring and engineering controls, adhering to maximum exposure limits set by OSHA, initial and routine training).

- to conduct employee training regarding the hazards they are dealing with, how to use any required protective equipment and engineering controls, necessary work practices which must be adhered to and how to respond to an emergency. Training should be conducted initially for new employees and thereafter, on an on going routine basis.

- provide proper medical surveillance of employees who are working in areas where they may become exposed to hazardous substances.

NOTE: OSHA allows EPCRA plans to be used if they encompass all components of the OSHA requirements (29CFR 1910.120(q)).

- **PSM plan** must identify what types of industrial accidents could occur due to fires, explosions or highly hazardous chemical releases within the facility (29 CFR 1910.119 (f)).

  Plan must:

  > identify processes which present a risk

  > identify actions which must be implemented to minimize these risks

For more information on HAZWOPER, see Chapter VI - Employee and Worker Protection.

IV. EMERGENCY RESPONSE REGULATIONS

Applicable Laws

CERCLA 40 CFR part 302

EPCRA Hazardous Substance Release Notification (EPCRA Section 304) 40 CFR part 355.40

RCRA
- For hazardous waste release, 40 CFR 265 subparts C and D
- For UST hazardous substance or petroleum release, 40 CFR 280 subparts E and F.

CWA 40 CFR part 112 (amended version following release of FR July 1, 1994 covers both SPCC **and** OPA)

OSHA 29 CFR part 1910.120(q) (HAZWOPER)

A RELEASE IS TO BE REPORTED WHEN IT...

CERCLA

- Is a reportable quantity (RQ)*
- Is into the "environment"

CERCLA defined "environment" can occur even if release is contained and has not left the facility or its grounds. For example, if a leak or spill has been contained but the RQ level of a listed substance is still able to volatilize or migrate into the surrounding air, water or soil, then is considered a release.

Releases which stay contained on facility grounds and which can result in exposure to facility workers but not the surrounding community, are a CERCLA release.

* For RQ reference EPA's "List of List".

EPCRA

- Is a reportable quantity*
- Is "into the environment" 40 CFR 355.40 (a) EPCRA defined release "into the environment" is a release which migrates off of facility property by air, water, or ground run-off.

* For RQ see section List of List

RCRA

- If the hazardous waste release is less than the required RQ under CERCLA or EPCRA, it still needs to be reported as delineated in the provisions called out in your Safety and Emergency or Contingency plans.
- For **USTs** (40 CFR 280.50)

  Owners and operators of UST systems must report to the implementing agency any of the following conditions:

  - the discovery of released regulated substances at the UST site or in the surrounding area (e.g. the presence of free product or vapors in soils, basements, sewer and utility lines and nearby surface waster);
  - unusual operating conditions (e,g, erratic behavior of product dispensing equipment, the sudden loss of product from the UST system, or an unexplained presence of water in the tank), unless system equipment is found to be defective but not leaking, and is immediately repaired or replaced;
  - monitoring results that indicate a release may have occurred unless:
    - the monitoring device is found to be defective and is immediately repaired, recalibrated or replaced and additional monitoring does not confirm the initial result; or
    - in the case of inventory control, a second month of data does not confirm the initial result.

CWA
- Any NPDES exceedences or release of substances not covered by the NPDES.

CAA
- any violations of NAAQS;
- any NESHAPS violations;

OSHA
- HAZWOPER applies to:

  Releases of Hazardous Substances that require an Emergency Response
- Any release of a hazardous substance with which employees and inmates may be involved, is covered by HAZWOPER.

REPORTABLE QUANTITY (RQ)

CERCLA RQ

The RQ for CERCLA listed hazardous substances are listed in 40 (40 CFR Part 302.5)

The RQ for CERCLA <u>unlisted</u> hazardous substances is <u>100 pounds</u>

EPCRA RQ

The RQ for EPCRA extremely hazardous substances are listed in 40 CFR Part 355 Appendices A and B. It is usually 1 pound.

For all other EPCRA hazardous substances, the above CERCLA RQs apply.

RELEASE REPORTING - EXEMPTIONS

CERCLA

- If release is contained within the facility or its boundaries and **cannot** migrate or volitize into the surrounding air, ground or water.

- Releases which are below the reportable quantity (RQ) or if no RQ is given, which are less than 1 pound.
- All CERCLA Section 103(f) permitted continuous releases.
- Release of a pesticide which is being properly applied according to the Federal Fungicide and Rodenticide Act (FIFRA).

EPCRA

- All SARA Title III permitted continuous releases (40 CFR 302.8 (b)).
- Federally permitted releases as defined by section 101 (10) of CERCLA.
- Releases to which only workers within the facility or on the facility grounds are exposed (release does not threaten surrounding community).

RCRA

- Federally permitted discharge such as under-ground injection wells which has been approved by a RCRA permit.

CWA

- NPDES permitted releases from sewage disposal facilities;
- Discharges to public sewer systems as long as it conforms with CWA pretreatment standards;

CAA

- Permitted releases.

NOTIFICATION INFORMATION

CERCLA

- Immediately contact:
- National Response Center (NRC)
  800/424-8802 OR 202/267-2675

EPCRA

- Immediately contact (those appropriate to the release):

- State Emergency Response Commission (SERC)
- Local Emergency Planning Committee (LEPC)
- National Response Center (NRC)
- Local Fire Department

RCRA

- Immediately contact:

  National Response Center or EPA regional office

  EPA Regional Offices:

I:	617/223-7265
II:	908/548-8730
III:	215/597-9898
IV:	404/347-4062
V:	312/353-2318
VI:	214/655-2222
VII:	913/236-3778
VIII:	303/293-1788
IX:	415/744-2000
X:	206/553-1263

- For UST releases, contact EPA within 24 hours regarding <u>any</u> confirmed or suspected release. (40 CFR 280.50)

  If the UST spill is less than 25 gallons of a petroleum product or less than the reportable quantity for a hazardous substance, it must <u>only</u> be reported if containment and cleanup cannot be accomplished within 24 hours. (40 CFR 280.53)

CWA

- Within 24 hours contact appropriate EPA regional office regarding any noncompliance with your NPDES permit.

- For SPCC spill of oil or hazardous substances above the reportable quantity, immediately notify NRC.

  OR

  If immediate NRC notification is not possible, notify the EPA Regional Office or Coast Guard instead, provided the NRC is notified as soon as possible.

CAA

- Within 30 days contact EPA **and** State Program Office.

- For Vinyl Chloride, send written report to above two agencies within ten days.

NOTIFICATION CONTENT

The following information is required for EPCRA defined releases (40 CFR part 355.40 (b) (2)), and are the basic requirements of other releases as well.

- chemical name or identity of any substance involved in the release;

- release quantity (estimate);

- location, time, release duration;

- identification of media into which release occurred (water, air, ground);

- identify whether chemical/s is/are on extremely hazardous substance (EHS) list (Appendices A and B, 40 CFR 355);

- any known or anticipated acute or chronic health risks associated with the emergency and, where appropriate, advice regarding medical attention necessary for exposed individuals (obtain this information from MSDSs);

- proper precautions to take as a result of the release, including evacuation (from emergency plan);

- Name, telephone number of contact person(s).

INITIAL RESPONSE

CERCLA, EPCRA, & RCRA

Follow HAZWOPER, Emergency Response Plans and Contingency Plans

See chapter VI, Employee and Worker Protection for more information on HAZWOPER.

See chapter XI, Hazardous Waste Management for more information on RCRA safety and emergency plans.

For USTs

- Corrective actions need to be initiated for confirmed UST releases (40 CFR 280 Subpart F).

  This involves:

  - eliminating all safety and fire hazards;
  - investigating the release area for soil and groundwater contamination;
  - removing contaminated soil and any free floating product;
  - assessment of what further mitigation actions are required.

CWA Implement your Spill Prevention, Control and Countermeasure plan

OSHA Implement your HAZWOPER response plan

FOLLOW-UP

CERCLA Send follow-up written report to NRC

EPCRA Send follow-up written report to SERC and LEPC

RCRA Send written report to EPA office within 15 days

Report should contain:

- Owner/operator's name, address and telephone number;
- Name, address and telephone number of site;
- Quantity of material released;
- Date, time and type of incident;
- Name and quantity of materials released;
- Assessment of actual or potential acute/chronic health hazards due to emergency;
- Estimated quantity and deposition of recovered material resulting from emergency.

For **UST** spills submit within:

- spills of less than 25 gallons which cannot be cleaned up in 24 hours, must be reported;
- 20 days, report covering initial abatement steps (40 CFR 280.62 (b));
- 45 days, report covering the release and site characterization (40 CFR 280.63 (b)).

CWA Within 60 days, submit report to EPA following:

- a single spill of 1000 gallons or greater
- two spills within a 12 month period

Also, send a copy to the regulating state agency

FOLLOW-UP REPORT CONTENT

Most follow-up reports should contain information on:

- Actions taken to respond to and contain release;
- Discuss any known acute/chronic health risks resulting from the release;
- If applicable, provide medical advice for exposed individuals.

Topic (Title References)	40 CFR Part
reporting of suspected releases	280.50
investigation due to off-site impacts	280.51
release investigation and confirmation steps	280.52
reporting and cleanup of spills and overfills	280.53
initial response	280.61
initial abatement measures and site check	280.62
initial site characterization	280.63
free product removal	280.64
investigations for soil and ground-water cleanup	280.65
corrective action plan	280.66
public participation	280.67

V. COMMUNITY RIGHT-TO-KNOW

The Emergency Planning and Community Right-to-Know Act (EPCRA) established four chemical reporting requirements within its community right-to-know section which your facility may be required to adhere to:

- Emergency Planning Notification (section 302)
- MSDS Submissions (section 311)
- Emergency and Hazardous Chemical Inventory (section 312)
- Toxic Release Reporting (section 313)

HAZARDOUS MATERIALS REPORTING(40 CFR 370.2 & 370.21)

MSDS SUBMISSIONS

EPRCA (section 311) effects all facilities which are mandated by the Occupational Safety and Health Act (29 CFR 1910.1200 (g)) to keep copies of material safety data sheets (MSDSs) for certain hazardous substances, if these hazardous substance meet the reporting thresholds of:

- 10,000 pounds or greater for a hazardous substance;
- the TPQ or 500 pounds (55 gallons) or greater (whichever is less) for an extremely hazardous substance.

at any one time in the given year

. Then, the facility must:

- Submit copies of an MSDS for each hazardous substance

OR

- submit a list containing all the hazardous substances organized by hazard grouping.

These copies must be submitted to your:

- SERC;
- LEPC;
- fire department.

EMERGENCY and HAZARDOUS CHEMICAL INVENTORY (Tier I & II)
(40 CFR 370.25)

EPCRA (section 312) requires that all facilities which store hazardous chemicals (as defined in OSHA 29CFR 1910.1200(b)(1)) at any one time in the year above the amounts of:

- 10,000 pounds or greater for a nonextremely hazardous substance ;
- the TPQ or 500 pounds (55 gallons) or greater (whichever less) for an extremely hazardous substance.

to submit an annual Tier I or II Inventory form to their:

- SERC;
- LEPC;
- fire department.

This form is to be submitted before March 1 of each year.

Extremely Hazardous Substances Notification

In accordance with Executive Order #12856, all Federal facilities were required to notify their respective Local Emergency Planning Commission (LEPC) by March 3, 1994, if they have any extremely hazardous substances (EHS) at their facility that meet or exceed the Threshold Planning Quantity (TPQ) as required in section 302 of EPCRA. For further information reference Environmental Advisory dated 6/8/94.

TOXIC RELEASE INVENTORY (TRI)
(40 CFR Part 372.22)

Note: Through the directives of a Presidential Executive Order all Federal facilities re required to be responsive to all sections of EPCRA.

EPRCA (section 313) requires that facilities which meet **ALL** of the following requirements:

- are in one of the Standard Industrialization Classification (SIC) codes 20 through 39;
- have 10 or more full-time employees;
- manufacture, import, process a TRI listed toxic above the listed threshold level (see 40 CFR Part 372.65 for this

chemical list).

Threshold limits are:
(40 CFR 372.25)

- 25,000 pounds if you manufacture, import or process a listed toxic chemical;
- 10,000 pounds if you otherwise use a listed toxic chemical.

Must, submit an annual toxic release inventory (TRI) report or Form R.

The specific toxic chemical list for TRI chemicals can be found in 40 CFR Subpart D (Part 372.65).

MIXTURES
(40 CFR 370.28)

If a facility has mixtures which contains constituents covered by the OSHA Hazard Communication Standard (29 CFR Part 1910.1200), then:

- The facility can either supply an MSDS for the mixture itself or for the individual components in the mixture which are reportable under OSHA HC.
- For mixtures which have not been tested as a whole by the manufacturer MSDSs for their individual constituents which are present in a quantity of 1 percent or greater must be supplied. If the component is a carcinogen, the mixture is considered carcinogenic if the substance composes 0.1% of the mixture or greater.

NOTE: Facilities must be consistent in reporting their chemicals as mixtures or individual components in their MSDS, Tier I/II reports and Form R reports.

TIER I & II REPORTING

A facility can submit either a Tier I or II report, unless they are specifically requested by their SERC, LEPC or fire station to submit a Tier II report.

The following information must be provided in your Tier I report:

- facility identification;
- SIC code;
- owner/operator
- amount of hazardous chemical in each category, at your

facility in the past year (estimate);

- average daily amount of hazardous chemical in each category, at your facility in the past year (estimate);
- general location of various chemicals within your facility;
- chemical physical hazards;
- health hazards;
- emergency contacts.

There are general instructions provided with the form which explain how to complete the necessary information.

A Tier II report is more detailed than the Tier I, since the requested information must be completed by individual chemical rather then just by chemical category (40 CFR 370.41). Additional detailed information which must be supplied is:

- description of how the various hazardous chemicals are stored;
- indication whether information is being withheld due to confidentiality.

For copies of the Emergency and Hazardous Chemical Inventory (Tier I and II Reports) and accompanying instructions, see 40 CFR Subpart D 370.40 and 370.41.

TIER I & II REPORTING EXEMPTIONS

Chemicals which need not be reported on the Emergency and Hazardous Chemical Inventory (Tier I & II) are:

- any food, food additive, color additive, drug or cosmetic regulated by the Food and Drug Administration;
- any substance present as a solid in any manufactured item to the extent exposure to the substance does not occur under normal conditions of use;
- any substance to the extent it is used for personal, family or household purposes, or it is present in the same form and concentration as a product packaged for distribution and use by the general public;
- any substance to the extent it is used in a research laboratory or a hospital or other medical facility under the direct supervision of a technically qualified individual;

- any substance to the extent it is used in routine agricultural operations or is a fertilizer held for sale by a retailer to the ultimate customer.

TIER I & II CALCULATIONS

MAXIMUM AMOUNT

TIER I

1. For each chemical you are to report, estimate which day during the past year you had the greatest amount of that substance stored in your facility;

2. Determine all the physical and health hazard categories into which this chemical fits;

3. By hazard type, add up the maximum weights of each chemical that fits into each particular hazard category;

4. Identify from the Tier I form which reporting range each hazard type fits into and give it the appropriate code;

5. enter this code onto the Tier I form.

TIER II

1. Complete Tier I steps 1 and 2 discussed above for maximum amounts.

2. Identify from the Tier II form which reporting range each hazardous substance fits into and give it the appropriate code;

3. enter this code onto the Tier I form.

AVERAGE DAILY AMOUNT

TIER I

1. For each chemical you are to report, estimate the average weight that you had in your facility over the entire year. To do this, add up all the daily weights and divide by the total number of days that the chemical was present at your facility.

2. By hazard type, add up the average daily weights of each chemical that fits into each particular hazard category;

3. Identify from the Tier I form which reporting range each hazard type fits into and give it the appropriate code;

4. enter this code onto the Tier I form.

TIER II

1. Complete Tier I steps 1 and 2 discussed above for average daily weights.

2. Identify from the Tier II form which reporting range each hazardous substance fits into and give it the appropriate code;

3. enter this code onto the Tier I form.

TOXIC RELEASE INVENTORY REPORTING
(40 CFR 372 Subpart B)

The list for section 313 TRI chemicals can be found in 40 CFR 372.65, Subpart D.

The following information must be provided in your TRI report:

- facility information
- technical & public contacts
- SIC Code
- latitude and longitude
- Dun & Bradstreet number(s)
- EPA Identification number (s)
- facility NPDES permit number(s)
- toxic chemical identity
- activities and uses of chemical within facility
- maximum amount of chemical on-site at any time during year
- information regarding releases of the substance into the environment
- information regarding transfer of chemical to off-site locations
- on-site treatment information
- source reduction and recycling activities

The most current version of EPA form R (form #9350-1) and the accompanying instructions can be obtained from (40 CFR 372.85):

Section 313 Document Distribution Center
P.O. Box 12505
Cincinnati, OH 45212

TOXIC RELEASE INVENTORY EXEMPTIONS

Exemptions for TRI reporting are listed in 40 CFR part 372.38. These exemptions cover certain: de minimis concentrations of a toxic chemical in a mixture, toxic chemical containing articles, toxic chemical uses, activities in laboratories, reporting by certain operators of establishments on leased property.

Note: It should be noted that fuels used for vehicle fleet operations, powerhouse operations, and emergency generator operations are exempt from TRI reporting requirements. Additionally, chemical additives used HVAC systems are also exempted. However, these same chemicals are not exempted from the other components of EPCRA such as Tier I & II reporting and Section #302 notification.

TOXIC RELEASE INVENTORY CALCULATIONS

The calculations required for TRI Form R reporting are very detailed and specific. For this reason the first time reporter will want to review EPA's instructions for reporting very carefully. Training programs have been offered in the past through EPA to assist program managers in this area.

It is estimated that very few facilities in the BOP will fall into the TRI reporting requirements. However, should your facility meet the reporting threshold requirements you may wish to seek additional guidance through EPA's EPCRA hotline by calling 1-800-535-0202.

EXECUTIVE ORDER 12856

Federal facilities that manufacture, process or use toxic chemicals are now required to publicly report their wastes and releases. The first of the Toxic Release Inventory (TRI) reports are due by July 1, 1995, covering the 1994 year.

BOP facilities which meet the TRI reporting requirements, subsequently, must develop goals to reduce total releases and off-site transfers of TRI toxic chemicals by 50 percent by the end of 1999.

To be responsive to the Order, <u>all BOP Facilities</u> must develop plans to contribute to the agency's goal of toxic chemical usage reduction which can be achieved through Institution Supplements. However, those facilities which are required to report under the TRI program must incorporate specific language into their facility plan illustrating how they will contribute to the agency wide reduction effort. As stated in the Order, to the extent practicable the reductions should be achieved by source reduction

practices, in preference to other strategies.

VI. EMPLOYEE & WORKER PROTECTION

For answers to additional questions involving Hazard Communication, Process Safety Management (HAZWOPER) call your local OSHA office.

HAZARD COMMUNICATION STANDARD (40 CFR 1900.1200)

1. BOP facilities must conduct a hazard assessment in order to determine the various OSHA Communication Standard 29 CFR 1910 hazardous chemicals which are used within their facility.

2. Employers must develop a hazard communication program which addresses:

   - MSDSs and ensures they are accessible for employees;
   - proper labeling of hazardous materials;
   - employee training regarding the hazardous substances used in the workplace;

HAZARD COMMUNICATION

The purpose of OSHA's Hazard Communication program is to ensure that the hazards of all chemicals produced or imported are evaluated, and that information concerning their hazards is transmitted to employers and employees. This transmittal of information is to be accomplished by means of comprehensive hazard communication programs, which are to include container labeling and other forms of warning, material safety data sheets and employee training (29 CFR part 1910.1200).

Applicability

The OSHA Communication Standard 29 CFR 1910 includes any hazardous chemical which is an element, chemical compound or mixture of elements and/or compounds that presents a health or physical hazard to employees in the workplace.

Some of the substances included in the OSHA HC are taken from the latest editions of:

- 29 CFR 1910 Subpart Z toxic and hazardous substances;
- the American Conference of Governmental Industrial Hygienists' (ACGIH) list of chemicals which have an established threshold limit value (TLV);
- the National Toxicology Program's, Annual Report on

carcinogenic chemicals;

- the International Agency for Research on Cancer Monographs' chemical listing.

The OSHA chemical list also extends to substances not covered by the above documents but to which your employees could be exposed during an emergency and which could result in a safety or health hazard.

Written Hazard Communication Program
(§ 1900.1200(e))

Employers shall develop, implement and maintain at the workplace a written hazard communication program for their workplaces which at least describes how the criteria specified for labels, and other warning forms, material safety data sheets (MSDS) and employee information and training will be met and which also includes:

- a list of the hazardous chemicals known to be present using an identity that is referenced on the appropriate MSDS form (the list may be compiled for the workplace as a whole or for individual work areas);

- the methods the employer will use to inform employees of the hazards of non-routine tasks and the hazards associated with chemicals contained in unlabeled pipes in their work areas.

Labels and Other Warnings
(§ 1910.1200 (f)(4)to(10))

1. if the hazardous chemical is regulated by OSHA in a substance-specific health standard, the employer shall ensure that the labels are in accordance with the requirements of that standard.

2. the employer shall ensure that each container of hazardous chemicals in the workplace is labeled, tagged and marked with the following information:

   - identity of the hazardous chemical(s) contained therein;

   - appropriate hazard warnings.

3. the employer may use signs, placards, process sheets, batch tickets, operating procedures, or other such written materials in lieu of affixing labels to individual stationary process containers, as long as the alternative method identifies the containers to which it is applicable and conveys the information required by paragraph (2) above to be on a label. The written materials shall be readily accessible to the employees in their work area throughout each work shift.

4. the employer **shall not** remove or deface existing labels on

incoming containers of hazardous chemicals, unless the container is immediately marked with the required information.

5. the employer shall ensure that labels or other forms of warning are legible, in English, and prominently displayed on the container, or readily available in the work area throughout each work shift. Employers having employees who speak other languages may add the information in their language to the material presented, as long as the information is presented in English as well.

6. the employer need not affix new labels to comply with the labels and other forms of warning section, if existing labels already convey the required information.

Material Safety Data Sheets
(§ 1910.1200 (g))

1. employers shall have a material safety data sheet (MSDS) for each hazardous chemical which they use;

2. the employer shall maintain copies of the required MSDSs for each hazardous chemical in the workplace, and shall ensure that they are readily accessible during each work shift to employees when they are in their work area(s).

3. the material safety data sheets may be kept in any form, including operating procedures, and may be designed to cover groups of hazardous chemicals in a work area where it may be more appropriate to address the hazards of a process rather than individual hazardous chemicals. However, the employer shall ensure that in all cases the required information is provided for each hazardous chemical, and is readily accessible during each work shift to employees when they are in their work area(s).

Training

Employee training shall include at least:

1. methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area;

2. the physical and health hazards of the chemicals in the work area;

3. the measure employees can take to protect themselves from these hazards, including specific procedures the employer has implemented to protect employees from exposure to hazardous chemicals, such as appropriate work practices, emergency procedures and personal protective equipment;

4. the details of the hazard communication program developed by

the employer, including an explanation of the labeling system and the material safety data sheets, and how employees can obtain and use the appropriate hazard information.

PROCESS SAFETY MANAGEMENT (PSM)

This program applies to employers who make, use, process or store highly hazardous chemicals (29 CFR 1910.119). (see Chapter III for PSM definition of highly hazardous chemical).

EXISTING PROCESSES

In order to protect employees from hazards which could occur during an industrial accident (i.e. chemical releases, fires, explosions), applicable operations which use highly hazardous chemicals must follow process safety management (PSM) procedures.

NEW PROCESSES

New operations which will use highly hazardous substances, cannot be started up until the employer has collected the necessary process safety information (PSI) regarding (§ 1910.119 (d)):

- chemical hazard information
- process technology information
- process equipment information

and the employer must also perform a process hazard analysis (PHA) of the new operation (§ 1910.119 (e)).

OCCUPATIONAL EXPOSURE TO HAZARDOUS CHEMICALS IN LABORATORIES

If your facility has laboratories (i.e. medical lab) which use OSHA Hazardous Communication (29 CFR part 1910.1200) defined hazardous materials, it may need to comply with special standards regarding hygiene plans and work practices for employees who come into contact with these substances.

MEDICAL RECORDS

Staff who have been exposed to a hazardous chemical in the workplace must be allowed access to the medical records kept by their employer.

HAZARDOUS WASTE OPERATIONS & EMERGENCY RESPONSE (HAZWOPER) APPLICABILITY

For facilities and chemicals covered by HAZWOPER, also see Chapters III (Applicable Facilities) and IV (Applicable Chemicals).

Remember:

- facilities which do not have extremely hazardous substances (EHSs) above the TPQ, but whose employees will respond to a release are covered by HAZWOPER.
- any release of a hazardous substance in which employees may be involved in the emergency response, even if substance is not an EHS, is covered by HAZWOPER.

For employers whose employees may need to response to an EPCRA or CERCLA release, the worker protection requirements are briefly addressed in 40 CFR part 311. This section states that for these situations, the provisions found in 29 CFR 1910.120 apply (HAZWOPER).

IF EMPLOYEES HANDLE EMERGENCY RESPONSE to HAZARDOUS SUBSTANCE RELEASE (§ 1910.120 (a)(v) & (q))

It is recommended that each facility work with their local OSHA office to formulate a HAZWOPER program which meets their specific state's needs and satisfies the requirements of this law. The local OSHA office can help clarify how HAZWOPER applies to your facility operations.

Employers whose employees will be engaged in emergency response operations for releases of, or substantial threats of releases of, hazardous substances without regard to the location of the hazard must have an emergency response plan.

Plans which have already been developed to meet the requirements of section 303 of the Superfund Amendments and Reauthorization Act of 1986 (the Emergency Planning and Community Right-to-Know Act of 1986) can be used in place of a separate HAZWOPER plan if they meet all the requirements of HAZWOPER.

Emergency Response Plan (§ 1910.120 (q) 1 & 2)

An emergency response plan must be developed and implemented to handle anticipated emergencies prior to the commencement of emergency response operations. The plan shall be in writing and available for inspection by employees and OSHA personnel.

The emergency response plan shall address, at a minimum, the

following to the extent that they are not addressed elsewhere:

- pre-emergency planning and coordination with outside parties;

- personnel roles, lines of authority, training and communication;
- emergency recognition and prevention;
- safe distances and places of refuge;
- site security and control;
- evacuation routes and procedures;
- decontamination;
- emergency medical treatment and first aid;
- emergency alerting and response procedures;
- critique of response and follow-up;
- personal protective equipment (PPE) and emergency equipment;

Training (1910.120 (q) (6))

Training shall be based on the duties and function to be performed by each responder (e.g. first responder awareness level, first responder operations level, hazardous materials technician, hazardous materials specialist). The skill and knowledge levels required for all new responders shall be conveyed to them through training before they are permitted to take part in actual emergency operations on an incident. Employees who participate, or who are expected to participate, in emergency response shall be given training in accordance with the following:

1. **First Responder Awareness Level Training**

   First responders <u>at the awareness level</u> are individuals who are likely to witness or discover a hazardous substance release and who have been trained to initiate an emergency response sequence by notifying the authorities of the release.

   These individuals shall have sufficient training or have had sufficient experience to objectively demonstrate competency in the following areas:

   - understanding of what hazardous substances are and the risks associated with them in an incident;
   - understanding of the potential outcomes associated with an emergency created when hazardous substances are present;

- the ability to recognize the presence of hazardous substances in an emergency;

- the ability to identify the hazardous substance, if possible;

- an understanding of the role of the first responder awareness individual in the employer's emergency response plan including site security and control and the U.S. Department of Transportation's Emergency Response Guidebook;

2. **First Responder Operations Level Training**

First responders at the operations level are individuals who respond to releases or potential releases of hazardous substances as part of the initial response to the site for the purpose of protecting nearby persons, property, or the environment from the effects of the release. They are trained to respond in a defensive fashion without actually trying to stop the release. Their function is to contain the release from a safe distance, keep it from spreading, and prevent exposures.

These individuals receive **at least eight hours of training** or have sufficient experience to objectively demonstrate competency in the following areas:

- the first responder awareness level training requirements;

- knowledge of the basic hazard and risk assessment techniques;

- know how to select and use personal protective equipment provided to the first responder operation level;

- an understanding of basic hazardous materials terms;

- know how to perform basic control, containment and/or confinement operations within the capabilities of the resources and personal protective equipment available with their unit;

- know how to implement basic decontamination procedures;

- an understanding of the relevant standard operating procedures and termination procedures.

3. **Hazardous Materials Technician Training**

Hazardous Materials Technicians are individuals who respond to releases or potential releases for the purpose of stopping the release. They assume a more aggressive role than a first responder at the operations level in that they

approach the point of release in order to plug, patch or otherwise stop the release of a hazardous substance.

These individuals must have received **at least 24 hours** of training equal to the first responder operations level and in addition have competency in the following areas:

- know how to implement the employer's emergency response plan;
- know the classification, identification and verification of known and unknown materials by using field survey instruments and equipment;
- be able to function within an assigned role in the Incident Command System;
- know how to select and use proper specialized chemical personal protective equipment provided to the hazardous materials technician;
- understand hazard and risk assessment techniques;
- be able to perform advance control, containment, and/or confinement operations within the capabilities of the resources and personal protective equipment available with the unit;
- understand and implement decontamination procedures;
- understand termination procedures
- understand basic chemical and toxicological terminology and behavior.

4. **Hazardous Materials Specialist Training**

These individuals respond with and provide support to hazardous materials technicians. Their duties parallel those of hazardous materials technicians, however, their duties require a more directed or specific knowledge of the various substances they may be called upon to contain.

These individuals would also act as a liaison with Federal, state, local and other government authorities in regards to site activities.

These individuals must have received **at least 24 hours** of training equal to the technician level and in addition have competency in the following areas:

- know how to implement the local emergency response plan;
- understand classification, identification and verification of known and unknown materials by using

advanced survey instruments and equipment;

- know of the state emergency response plan;

- be able to select and use proper specialized chemical personal protective equipment provided to the hazardous materials specialist;
- understand in-depth hazard and risk techniques;
- be able to perform specialized control, containment and/or confinement operations within the capabilities of the resources and personal protective equipment available;
- be able to determine and implement decontamination procedures;
- have the ability to develop a site safety and control plan;
- understand chemical, radiological and toxicological terminology and behavior.

5. **On Scene Incident Commander Training**

Incident commanders, who will assume control of the incident scene beyond the first responder awareness level, shall receive **at least 24 hours** of training equal to the first responder operations level and in addition have competency in the following areas:

- know and be able to implement the employer's incident command system;
- know how to implement the employer's emergency response plan;
- know and understand the hazards and risks associated with employees working in chemical protective clothing;
- know how to implement the local emergency response plan;
- know of the state emergency response plan and of the Federal Regional Response Team;
- know and understand the importance of decontamination procedures.

Refresher Training
(§1910.120 (q)(8))

Those employees who are trained in accordance with the above HAZWOPER training requirements, shall receive **annual** refresher training of sufficient content and duration to maintain their

competencies, or shall demonstrate competency in those areas at least yearly.

A statement shall be made of the training or competency, and if a statement of competency is made, the employer shall keep a record of the methodology used to demonstrate this competency.

Trainers
(§ 1910.120 (q)(7))

In order to teach any HAZWOPER training sessions, it is required that the trainer have successfully completed a training course for teaching in this area (e.g. courses offered by the U.S. National Fire Academy) or have the necessary training and/or academic credentials and instructional experience to teach the required subject matter.

Procedures for Handling Emergency Response (§ 1910.120 (q) (3))

The senior emergency response official responding to an emergency shall become the individual in charge of a site-specific Incident Command System (ICS). All emergency responders shall be coordinated and controlled through the individual in charge of the ICS.

> **NOTE:** The senior official at an emergency response is the most senior official on the site who has the responsibility for controlling the operations at the site.

The individual in charge of the ICS shall identify, to the extent possible, all hazardous substances or conditions present and shall address as appropriate site analysis, use of engineering controls, maximum exposure limits, hazardous substances handling procedures and use of any new technologies.

Based on the hazardous substances and/or conditions present, the individual in charge of ICS shall implement appropriate emergency operations, and assure that the personal protective equipment worn is appropriate for the hazards to be encountered.

> **NOTE:** personal protective equipment shall meet, at a minimum the OSHA criteria defined in 29 CFR 1910.156(e) when worn while performing fire fighting operations beyond the incipient stage for any incident.

Employees engaged in emergency response and exposed to hazardous substances presenting an inhalation hazard or potential inhalation hazard shall wear positive pressure self-containing breathing apparatus while engaged in emergency response, until such time that the individual in charge of the ICS determines through the use of air monitoring that a decreased level of respiratory protection will not result in hazardous exposures to employees.

The individual in charge of the ICS shall limit the number of emergency response personnel at the emergency site, in those areas of potential or actual exposure to incident or site hazards, to those who are actively performing emergency operations. However, operations in hazardous areas shall be performed using the buddy system in groups of two of more.

Back-up personnel shall stand by with equipment ready to provide assistance or rescue. Advance first aid support personnel, as a minimum, shall also stand by with medical equipment and transportation capability.

The individual in charge of the ICS shall designate a safety official, who is knowledgeable in the operations being implemented at the emergency response site, with specific responsibilities to identify and evaluate hazards and to provide direction with respect to the safety of operations for the emergency at hand.

When activities are judged by the safety official to be an immediately dangerous to life or health (IDLH) condition and/or to involve an imminent danger condition, the safety official shall have the authority to alter, suspend, or terminate those activities. The safety official shall immediately inform the individual in charge of the ICS of any actions needed to be taken to correct these hazards at the emergency scene.

After the emergency operations have terminated, the individual in charge of the ICS shall implement appropriate decontamination procedures.

When deemed necessary for meeting the tasks at hand, approved self-containing compressed air breathing apparatus may be used with approved cylinders from other approved self-contained compressed air breathing apparatus provided that such cylinders are of the same capacity and pressure rating. All compressed air cylinders used with self-contained breathing apparatus shall meet U.S. Department of Transportation and National Institute for Occupational Safety and Health criteria.

Skilled Support Personnel (1910.120 (q)(4))

Personnel, not necessarily an employer's own employees, who are skilled in the operation of certain equipment (e.g. mechanized earth moving or digging equipment, crane and hoisting equipment) and who are needed temporarily to perform immediate emergency support work that cannot reasonably be performed in a timely fashion by an employer's own employees, and who will be or may be exposed to the hazards at an emergency response scene, are not required to meet the above required training (in this section) for the employer's regular employees. However, these personnel shall be given an initial briefing at the site prior to their

participation in any emergency response. The initial briefing at

the facility shall include instruction in the wearing of appropriate personal protective equipment, what chemical hazards are involved, and what duties are to be performed. All other appropriate safety and health precautions provided to the employer's own employees shall be used to assure the safety and health of these personnel.

Specialist Employees (1910.120 (q)(5))

Employees who, in the course or their regular job duties, work with and are trained in the hazards of specific hazardous substance, and who will be called upon to provide technical advice or assistance at a hazardous substance release incident to the individual in charge, shall receive training or demonstrate competency in the area of their specialization annually.

Medical Surveillance (§ 1910.120 (q)(9))

The local OSHA office can assist in determining which HAZWOPER responder categories need to receive a baseline physical examination and be provided medical surveillance. 29 CFR 1910.120 (q)(9)(i) requires the following:

> Any emergency response employees who exhibit signs or symptoms which may have resulted from exposure to hazardous substances during the course of an emergency incident, either immediately or subsequently, shall be provided with medical examinations and consultations made available by the employer (§ 1910.120 (q)(9) & (f)(iii)).
>
> The detailed requirements regarding the content of such medical examinations and consultations may be found in 29 CFR 1910.120 (f)(4).

Chemical Protective Clothing (§ 1910.120 (q)(10))

Check with your local OSHA office to see how this section of HAZWOPER should be applied to your facility's operations.

Post Emergency Response Operations (§ 1910.120 (q) (11))

Upon completion of the emergency response, if it is determined that it is necessary to remove hazardous substances, health hazards and materials contaminated with them (e.g. contaminated soil or other elements of the natural environment) from the site of the incident, and where the clean-up is done on plant property using plant or work-place employees, the employees shall have completed the training requirements of the following sections:

- Employee Emergency Action Plan (§ 1910.38 a)
- Respiratory Protection (§ 1910.134);

- Hazard Communication (§ 1910.1200);

- any other appropriate safety and health training made necessary by the tasks that they are expected to perform (e.g. personal protective equipment and decontamination procedure training).

All equipment to be used in the performance of the clean-up work shall be maintained in serviceable condition and shall be inspected prior to use.

NOTE if a hazardous waste contamination site is discovered at a facility, and employees are involved in corrective action cleanup operations, than all the requirements listed in 29 CFR 1910.120 (a) through (o) apply.

VII. WATER RESOURCES MANAGEMENT

DRINKING WATER TREATMENT

The drinking water for BOP facilities is provided from both local municipalities and BOP owned water systems. In either case, it is necessary for the facility to ensure quality water is being supplied throughout the facility's domestic water system. In order to accomplish this it is necessary for each facility to apply the testing standards called for in the Safe Drinking Water Act.

The management of the Safe Drinking Water Act (SDWA) is delegated to the states for implementation and management. The following outlines the current requirements of the SDWA and can be used to assist in managing your local program, however, local regulations must also be considered.

The Safe Drinking Water Act was passed by Congress in 1974, and has been amended several times since then. The purpose of the Act is to make sure that the drinking water supplied to the public is safe and wholesome. The Environmental Protection Agency (EPA) is the Federal agency which has the responsibility of writing the regulations to carry out the provisions of the Act. EPA sets national drinking water standards which all water supplied to the public must meet. The people who supply the water are responsible for making sure that the water meets the standards.

EPA provides guidance, technical assistance, and some financing to these agencies. Most states have been delegated "Primacy", or the authority to run the program. In the states and on Indian Lands which do not have primacy, EPA runs the program directly. In these cases, EPA is the "state" mentioned in the regulations. Some Primacy States have, in turn, delegated their authority to counties. Throughout this material, the term "regulatory agency" is used. This refers to the state health department, county health department, EPA regional office, or whatever agency has Primacy. Regulatory agencies keep track of sample results, conduct detailed inspections called sanitary surveys, and take enforcement actions such as imposing fines and penalties when necessary. They also provide technical assistance to owners and operators of public water systems.

The requirements of the Safe Drinking Water Act apply to all public water systems. A public water system is one which serves piped water to at least 15 service connections or regularly serves an average of at least 25 people each day at least 60 days per year.

Public Water Systems are divided into three categories: community systems, non-community systems, and non-transient noncommunity systems. A community water system serves people year round, (a small town, for example) whereas a noncommunity system serves

people only for a portion of the time (a hotel, restaurant or campground, for example). A non-transient non-community system is a mixture of the two. This type of system serves the same people nearly every day but the people do not actually live at

the facility being served (schools or factories, for example). Different requirements apply to each type of system, although non-transient non-community systems generally have to meet the same requirements as community systems.

Before you read through the rest of this material, you should know the following things about your water system. The requirements that apply to your system depend on these three factors:

1. whether it is a community system, a non-transient non-community system, or a non-community system,

2. the number of people served by your system, and

3. whether it uses surface water or ground water.

There are three major types of requirements in the Safe Drinking Water Act:

1. Sampling and Reporting,

2. Record Keeping, and

3. Public Notification.

These are described below. Keep in mind that the owner or operator of the water system is responsible for meeting these requirements.

Sampling and Reporting:

Each supplier of water must collect samples from the water system, take them to a certified laboratory for analysis, and send the results to the regulatory agency (usually the state or county health department). The type of analysis performed, the sampling frequency, and the location of the sampling point vary from system to system, and chemical to chemical. Some states perform the sampling for the systems in their state.

Recordkeeping:

The laboratory results, name of the person who collected the samples, dates and locations of sampling points, steps taken to correct problems, sanitary survey reports, and other information must be kept on file by the water supplier.

Public Notification:

Any time there is a violation of a requirement, the public must be notified. Violations are divided into two

categories, Tier 1 and Tier 2, depending on the seriousness of the violation. For example, a violation of a standard indicating contamination in the system is more serious than a failure to meet a compliance schedule imposed by the

regulatory agency. Therefore, the violation of the standard would be considered Tier 1, and more extensive public notification would be required. The public notice must meet certain minimum requirements concerning the way that it is issued and its contents.

In addition to notification when there is a violation, a special one-time notification is required concerning lead. Again, there are minimum requirements about the content of the notice and the way that it is issued. The lead notification should have been done by June 19, 1988. If you have not done the notification yet, contact your regulatory agency for assistance.

Each regulatory agency has the option to make its own requirements stricter than EPA's. For example, some states have operator certification requirements, permitting requirements, and additional sampling requirements. Contact your primacy agency (usually the state or county health department) to find out if any additional requirements apply to your system.

The Safe Drinking Water Act allows regulatory agencies to issue variances and exemptions from some of the requirements for systems that are having major technical or financial problems in meeting the requirements. These are legal means by which a system can supply water to the public for a limited time which does not meet the requirements. Variances and exemptions are generally difficult to obtain and are rather uncommon. The supplier of water must prove to the authorities that there is no undue risk to health by allowing the variance or exemption. Contact your regulatory agency for more specific information.

EPA sets drinking water standards which apply to all public water systems across the country. There are two types of standards: primary and secondary. Primary standards are health based and are enforceable. Secondary standards are based on the aesthetic quality of the water and are non-enforceable guidelines. Remember that states have the option to set standards which are more strict than those set by EPA.

Primary Standards may be either Maximum Contaminant Levels or Treatment Technique Requirements. These are described below:

Maximum Contaminant Level Goal (MCLG):

This is a number which is associated with no adverse health effects. If someone drinks water for a lifetime containing the contaminant at this level, there should be no ill effects. As implied by the name, this number is a goal, not an enforceable standard. For chemicals which are believed to cause cancer, the MCLG is set at zero because there is no known safe level for this type of chemical.

Maximum Contaminant Level (MCL):

This is the enforceable standard. EPA sets the MCL as close to the MCLG as possible, taking costs and technology into consideration. The MCL is the number against which the water samples from your system are judged for compliance with the regulations.

Treatment Technique Requirements are set for contaminants which are difficult or costly to measure. For these contaminants, EPA may choose to require specific water treatment practices (such as filtration or corrosion control) to remove these contaminants and prevent health problems. This is done instead of setting an MCL for these contaminants.

Secondary Standards:

The Secondary Maximum Contaminant Level (SMCL) is a number associated with the aesthetic quality of the water, such as taste, odor, or color. Water with contaminants above the SMCL may not be pleasant to drink, but it will not cause health problems. According to EPA, these numbers are guidelines, not enforceable standards. However, some states choose to enforce these secondary standards. Contact your regulatory agency to find out if these standards apply to your system.

INDUSTRIAL EFFLUENT TREATMENT

INDUSTRIAL EFFLUENT

If a facility has **ANY** point source that discharges into waters of the United States a NPDES permit is required. A point source discharge includes but are not limited to, a pipe, conduit, channel, container, landfill leachate collection system, well, or tunnel.

APPLICABLE INDUSTRIAL OPERATIONS

The following are examples of some of the applications which require NPDES permits:

- any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, by-product or waste product;
- non-contact cooling water;
- filter backwash water;

- stormwater from industrial applications;
- industrial process wastewater.

NPDES PERMIT REQUIREMENTS

Permit Information

Some of the information requested in the NPDES permit is:

- general information such as: EPA I.D. Number, facility address and location, SIC codes;
- pollutant characteristics;
- facility contact;
- list of existing environmental permits;
- topographic map showing facility and boundaries and locations of intake and discharge structures;
- description of business conducted at facility;
- water flows through facility and types of treatment used;
- intake and effluent characteristics;
- quality of water into which wastestream is eventually discharged.

Permit Requirements

The NPDES permit will place limitations on individual pollutants within the waste stream as well as toxicity limitations. There may also be monitoring and reporting requirements. In addition, the facility may have to follow stated operation standards or develop best management practices.

NPDES EXCEEDENCES

The EPA regional office must be notified within 24 hours for situations where:

- any effluent limitations in the NPDES permit are exceeded;
- an unintended bypass **OR** upset occurs;

If, these situations pose a threat to the public health or the environment.

PRIOR NOTIFICATION

The EPA regional office must be notified of certain events, prior to their occurrence:

- facility changes or modifications which will impact the make-up of the permitted waste stream.
- activities which will result in the NPDES permit being violated
- anticipated bypasses

STORM WATER MANAGEMENT

Storm water is also a regulated activity by EPA in many instances. The EPA's Storm Water Permit program was designed to monitor and manage the run-off of areas and operations which would result in pollutants being washed into drainage areas and ultimately waterways. For the most part, the BOP does not fall into the required reporting criteria which would require applications for Storm Water Permits except for one primary area.

The Bureau frequently engages in construction/excavation activities which require a NPDES Storm Water permit whenever five acres or more of soil will be disturbed. Many of the states have reduced this area to less than one acre. For this reason, prior to construction this requirement needs to be taken into consideration. In the event contractors will be involved in excavation and grading activities, the contractor should be required to demonstrate that this concern has properly been addressed and that all necessary permits will be obtained.

OIL POLLUTION PREVENTION

This section briefly outlines the Clean Water Act's Spill Prevention Control and Countermeasure plan requirements. For more detailed information regarding emergency planning and emergency response requirements of this law see Sections III and IV of this manual.

SPILL PREVENTION, CONTROL, AND COUNTERMEASURE PLANS

The Spill Prevention, Control and Countermeasure (SPCC) plan focuses on procedures to prevent and control oil spills. The facility as owner/operator is required to commit manpower, equipment, and materials for accomplishing these purposes.

Facilities are normally exempt from the SPCC requirements if they meet all of the following (check state regs. also):

- the underground storage capacity is 42,000 gallons or less of oil, and;
- the storage capacity, which is not buried, of the facility is 1,320 gallons or less of oil, provided no single container has a capacity in excess of 660 gallons (40 CFR § 112.1 (d) 2).

Remember

Storage Capacity includes the capacity of all containers such as tanks, portable tanks, transformers, 55-gallon drums, 5-gallon drums etc.

The capacity of any empty containers that may be used to store oil, and are not permanently taken out of service, must also be counted in the facility's total storage capacity.

Registered Professional Engineer (Certifying Plan) Must:

- be familiar with the provisions of 40 CFR 112;
- have examined the facility;
- be a registered professional engineer in at least one state;
- need not be registered in the state in which the facility is located;
- the engineer's name, registration number, state of registration must be included as part of the SPCC plan;
- the engineer's seal must be affixed to the Plan as part of the certification.

DEFINITIONS

Discharge includes any spilling, leaking, pumping, pouring, emitting, emptying or dumping.

A harmful discharge quantity is an amount for which it has been determined may be harmful to the public health. This includes discharges of oil that violate applicable water quality standards, or cause a film or sheen upon or discoloration of the

surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

Navigable waters of the United States CWA 502(7) and 40 CFR110.3

Under the Clean Water Act, navigable waters of the United States are taken to mean:

A. All waters which are currently used, were used in the past or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to ebb and flow of tide;

B. All interstate waters, including interstate wetlands;

C. All other waters such as intrastate lakes, rivers, streams (**including intermittent streams**), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes and natural ponds, the use degradation or destruction of which would or could affect interstate or foreign commerce including any such waters:

1. Which are or could be used by interstate or foreign travelers for recreational or other purposes,

2. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce,

3. Which are used or could be used for industrial purposes by industries in interstate commerce;

D. All impoundments of waters otherwise defined as waters of the United States under this definition;

E. Tributaries of waters identified in paragraphs (A) - (D) above;

F. the territorial sea; and

G. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in (A) - (F) of this definition.

Point Source

is defined as:

any discernable, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture.

Pollutant

Under the CWA, pollutant means:

> dredged soil, solid waste, incinerator residue, filter backwash. sewage, garbage, sewage sludge, munitions, chemical waste, biological materials, radioactive materials, heat, wrecked or discarded equipment, rocks, sand, and industrial, municipal and agriculture waste discharged into water.

Spill Event

> a discharge of oil into or upon the navigable waters of the United states or adjoining shorelines in harmful quantities as defined at 40 CFR Part 110

Wetlands

> those areas that are inundated or saturated by surface or ground water at a frequency or duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.
>
> Wetlands generally include playa lakes, swamps, marshes, bogs and similar areas such as sloughs, prairie potholes, wet meadows, prairie river overflows, mudflats and natural ponds (40 CFR §110.1 (f)).

VIII.
AIR RESOURCES MANAGEMENT

To properly manage air emissions concerns you will need to be familiar with your local and state air quality regulations (ie State Implementation Plans), as well as the Federal requirements discussed below.

AIR QUALITY COMPLIANCE

Stationary Sources are subject to:

- national ambient air quality standards
- new source performance standards for new and modified sources
- hazardous air pollutant standards
- acid deposition control and stratospheric ozone protection

Mobile Sources are subject to:

- emission standards (national ambient air quality standards)
- clean fuel requirements

Indoor Air Quality regulations as of January 1995, had not been passed by Congress at the time of writing this manual. However, several proposed pieces of legislation are in the proposal phase for nonindustrial work environments. Both the EPA and OSHA have addressed this issue. It appears that future laws covering indoor air will address such issues as:

- sick building syndrome
- indoor air contaminants
- microbial contaminants
- environmental tobacco smoke
- HVAC operation and maintenance

You may wish to stay in touch with your local regulatory agency to remain current on this development.

Stratospheric Ozone Protection Title IV of the CAA specifically addresses protection of the stratospheric ozone layer. This section attempts to decrease the production and consumption of ozone depleting chemicals.

NATIONAL AMBIENT AIR QUALITY STANDARDS

NAAQS CAA Section 109 SIPs CAA Section 110
40 CFR, Part 50 40 CFR, Part 51, 52

States have developed their locality's air quality implementation plans (State Implementation Plans (SIPs)) for enforcement of the national ambient air quality standards (NAAQS). These plans address emission control requirements for the six priority pollutants (carbon monoxide, ozone, sulfur oxides, nitrogen oxides, particulate matter and lead) in both attainment and nonattainment regions. For nonattainment areas the SIPs provide strategies, procedures and regulatory requirements which will be used to bring these zones into compliance with the NAAQS. For attainment areas, the SIP provides a similar strategy for preventing the region from going out of compliance with the NAAQS.

Check with your responsible state agency for determining what is required in your state's SIP such as:

- reasonably available control technologies (RACT)
- permits for new sources performance standards
- automobile inspection programs
- transportation controls

Your EPA regional office should be able to put you in contact with the state office which handles the SIP.

The primary and secondary NAAQS can be found in the below listed parts of 40 CFR:

Pollutant	**40 CFR PART**
sulfur oxides (SOx) primary	50.4
secondary	50.5
particulate matter (P-10)	50.6
carbon monoxide (CO)	50.8
ozone (O^3)	50.9
nitrogen dioxide (NO^2)	50.11
lead (Pb)	50.12

Reasonably Available Control Technology (RACT)

Existing sources which do not meet NAAQS emissions requirements may need to invest in reasonably available control technologies (RACT). Although RACTs can be facility specific, the EPA has developed control technique guidelines (CTG) for certain industries. If a facility is covered by a CTG it may have to use the technologies and strategies called out in these documents. However, it is also possible that a facility covered by a CTG could negotiate its own RACT with the overviewing agency.

The definition of RACT (40 CFR Part 51.100) is:

> devices, system process modifications, or other apparatus or techniques that are reasonably available taking into account (1) the necessity of imposing such controls in order to attain and maintain a national ambient air quality standard, (2) the social, environmental and economic impact of such controls, and (3) alternative means of providing for attainment and maintenance of such a standard.

NEW SOURCES

NSPS Section 111 CAA
40 CFR, Part 60

NEW SOURCE PERFORMANCE STANDARDS (NSPS)

These uniform technology based standards apply to any of the over 65 EPA designated source categories listed in 40 CFR Part 60, subparts C through WWW which are undergoing construction or modifications which would result in an increase of hourly emissions rates to a region. Some of the applicable sources are: incinerators, boilers, liquid petroleum storage vessels, sewage treatment plants and fuel storage vessels.

NSPS standards are based on methods which the EPA has determined demonstrate the best continuous control technology available, taking into account costs and non air quality health and environmental impacts.

New sources which meet the NSPS standards require both a new source permit and a Title V operations permit. New sources are also subject to hazardous air pollutant requirements and may need to apply for a special Title V hazardous waste permit (see sections on HAP and Title V).

NOTE The EPA or State should be notified of any physical or operational changes at an existing facility which

5 could affect emission rates of any regulated 5
5 pollutant. The notification must be made 60 days 5
5 prior to the change. 5
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PRECONSTRUCTION REQUIREMENTS

Some states require that new source projects go through a preconstruction review program to determine the expected type and levels of emissions. This analysis may require the use of special computer modeling. The information is then forwarded to the necessary state agency.

New sources being constructed and existing sources which undergo any modifications or design changes, are required to obtain special permits.

NOTE the EPA can be requested to review and provide technical advice on these air permit compliance plans. Call your regional EPA office to request this assistance.

ATTAINMENT AREAS

Construction or design modification projects of new sources in attainment areas require (also see your state requirements):

1. a Prevention of Significant Deterioration (PSD) Permit, if they meet certain criteria (CAA, Section 160-169; 40 CFR 51.166 & 52.21):

   - the facility is a **major new source** in one of 29 selected industrial categories (within the over 65 EPA identified NSPS sources from 40 CFR Part 60, subparts C through WWW);

   AND

   has the potential to emit more than 100 tons per year (tpy) of a regulated NAAQ pollutant.

   - the facility has **any other new source** with the potential to emit over 250 tpy of a NAAQ pollutant.

   - the facility is a modified source of a regulated substance with an emissions increase that exceeds the listed allowable increase for that substance).

2. installation of best available control technology (BACT) into those facilities requiring a PSD permit.

3. an operating permit (40 CFR Part 70)*.

4. compliance with hazardous air pollutant standards* (40 CFR

Part 61)

* see sections on Hazardous Air Pollutants and Title V below)

Prevention of Significant Deterioration Permits

PSD permits are issued by the individual states and therefore may differ. However, all permit applications need information on:

- control technology review and BACT selection
- source impact analysis
- air quality analysis
- source information
- public participation

Best Available Control Technology (BACT)

In attainment zones, any stationary source construction or design modification projects must use BACT practices. In addition, it must be shown that these projects will not significantly deteriorate the air quality.

The definition given for BACT is: (40 CFR Part 52.21)

> an emissions limitation based on the maximum degree of reduction for each pollutant subject to regulation under the Act which would be emitted from any proposed **major stationary source** or major modification which the reviewing authority, on a case-by-case basis (taking into account: energy, environmental and economic impacts and other costs) determines is achievable for such source or modification through application of production processes or available methods, systems and techniques, including fuel cleaning or treatment or innovative fuel combination techniques for control of such pollutant. In no event shall application of BACT result in emissions of any pollutant which would exceed the emissions allowed by any applicable standard under 40 CFR Parts 60 and 61.

If the reviewing authority determines that technological or economic limitations on the application of measurement methodology to a particular emissions unit would make the imposition of an emissions standard infeasible, a design, equipment, work practice, operational standard or combination thereof, may be prescribed instead to satisfy the requirement for the application of BACT. Such standard shall, to the degree possible, set forth the emissions reduction achievable by implementation of such design, equipment, work practice or operation and shall provide for compliance by means which achieve equivalent results.

New Source Review

NSR permits are issued by the individual states and therefore may differ to a certain extent. However, all permit applications need information on:

- review of control technology to ensure LAER compliance
- source impact analysis
- air quality analysis
- source information (location, design, capacity)
- schedule of construction/modification process
- public participation

Lowest Achievable Emission Rates (LAER)

LAERs are required for construction and design modification projects in nonattainment areas. LAER is based on the most stringent pollution controls which are already in use for a particular industry and cost is not considered when formulating LAERs. These emission rates must be achieved if an industry wishes to locate in a nonattainment area. Additionally, the industry may need to offset its emissions by eliminating other emissions in the affected area.

The definition for LAER is given as: (40 CFR Part 51.165)

> for any source, the more stringent rate of emissions is based on the following: (1) the most stringent emissions limitation which is contained in the implementation plan of any State (SIP) for such class or category of stationary source unless the owner or operator of the proposed stationary source demonstrates that such limitations are not achievable; or (2) the most stringent emissions limitation which is achieved in practice by such class or category of stationary sources.

This limitation, when applied to a modification, means the LAER for the new or modified emissions units within or stationary source. In no event shall the application to the term permit a proposed new or modified stationary source to emit any pollutant in excess of the amount allowable under an applicable new source standard of performance.

New Sources Information and Activities (To-Do List)

Identify whether your region is in an attainment or a

nonattainment region.

If the facility is in a nonattainment area, determine what the classification is (marginal, moderate, serious, severe) and

complete any required preconstruction tasks (eg. computer modeling of air quality data). Submit necessary information regarding the expected emission levels.

Demonstrate that source will comply with:

- attainment = NAAQSs & PSD
- nonattainment = NAAQS & NSR
  If do not comply, then must apply for a permit:
- attainment area = PSD permit
- nonattainment area = NSR permit

FOR PSD Permit:

- show that emissions requirements will be met using BACT;
- review the various control techniques which can be used to reduce emissions.

FOR NSR Permit:

- show that emissions requirements will be met by using LAER;
- identify alternative sites
- offset any emissions increases

Notification to necessary agencies before startup

1. Written Notice (postmarked no later than 30 days after end of construction)
2. Startup Date Notification (not more than 60 days prior to and not less than 30 days prior to)
3. 15 Day Actual Startup Notification

HAZARDOUS AIR POLLUTANTS
40 CFR Part 61 & 63
CAA Section 112

Hazardous Air Pollutants (HAP) also HAP, Air Toxics referred to as **Air Toxics** apply to new, modified and existing sources of noncriteria air pollutants.

Prior to 1990, only 8 substances were classified as hazardous air pollutants: asbestos, benzene, beryllium, coke oven emissions, inorganic arsenic, mercury, radionuclides and vinyl chloride. However, the Title III 1990 CAA amendments significantly broadened the number of regulated HAPs by requiring the EPA to develop **National Emissions Standards for Hazardous Air Pollutants (NESHAP)**. Under these amendments, 189 more hazardous pollutants were added to the list (40 CFR Part 61.01 & Part 63 Subpart C).

There are two separate parts in the CFR which cover hazardous air pollutants (HAP):

- Part 61 (National Emission Standards for Hazardous Air Pollutants) are HAPs for which health-based standards have been established.

- Part 63 (National Emission Standards for Hazardous Air Pollutants for Source Categories) in this part the total emissions of various identified HAP source categories are to be controlled using MACTs or GACTs. The list of these HAPs and the listed source categories can be found in 40 CFR Part 63 Subpart C (The CFR must be at least a 1994 version) or in 58 FR 63941, December 3, 1993.

One of the EPA regulated hazardous air pollutants is asbestos. Standards regarding demolition and renovation projects involving asbestos can be found in 40 CFR Part 61.145.

There is also a special form which must be completed for these projects entitled Notification of Demolition and Renovation (a copy of this form can be found in 40 CFR Part 61.145, figure 3).

In order for facilities to determine their hazardous air pollutant emissions, they should review the EPA's publication

Screening Methods for the Development of Air Toxics Emission Factors (EPA-450/4-91-021)

Major Sources of Hazardous Air Pollutants

Are sources which emit 10 tons of a listed pollutant, 25 tons or more of a combination of listed pollutants; or any combination of lesser quantity major sources defined by EPA.

These sources are required to adhere to MACT controls.

Area Sources of Hazardous Air Pollutants

Area sources which emit less than 10 tons of most listed pollutants* or 25 tons of any combination.

These sources are required to adhere to either MACT or GACT controls.

Maximum Achievable Control Technology (MACT)

The EPA is developing MACTs for various industries. These standards will define control methods and strategies for reducing hazardous air pollutant emissions from all **"major sources"** (eg. materials substitution and design modification). In some situations where the emissions still pose a significant risk to public health and the environment, merely complying with the MACT may not be sufficient. In these cases, the facilities will have to invest in additional control techniques.

As EPA issues its MACT publications, affected industries will be given three years to comply.

New sources need to implement MACTs which are as effective as the best emission control techniques currently being utilized in the industry. Existing sources must invest in MACTs which are as effective as the top 12 percent of the best performing operations in its industrial category.

MACTs are defined as control technologies that achieve a maximum degree of reduction while taking into account implementation costs and other non-health related issues.

Generally Available Control Technology (GACT)

These technologies and strategies are less stringent and more flexible than MACTs and affect **area sources**.

APPLICABLE FACILITIES

Facilities which meet the following requirements will need to comply with HAP standards:

1. are a major (and in some cases area) emitter of a listed HAP (40 CFR Part 61.01 & Part 63, Subpart C).

2. are on an EPA list of major and area HAP industrial categories (40 CFR Part 61 Subparts B to FF & Part 63, Subpart C).

Presently, the EPA has identified eight HAP **area source** categories which will be subjected to NESHAPs compliance:

asbestos processing

chromic acid anodizing

commercial dry cleaning (perchloroethylene) transfer machines

commercial dry cleaning (perchloroethylene) dry to dry machines

commercial sterilization facilities

decorative chromium electroplating

halogenated solvent cleaners

hard chromium electroplating

The July, 16 1992 listing for major source regulated categories can be found in 57 FR 31576.

TITLE V PERMIT COMPLIANCE
(40 CFR Part 70)

Title V is the operating permit section of the CAA. It covers permitting procedures for operations rated as significant emissions sources of any of the regulated CAA pollutants (NAAQS, NESHAPS, ozone-depleting, acid rain causing). Since the 1990 CAA amendments added many more pollutants to the regulatory list (HAPs)*, it is important to be aware that many emission sources which were once exempt, will now be regulated. Furthermore, when calculating emissions levels for a facility, one needs to include all sources (eg. tanks, valves and dust) not just stack emissions. Title V permits cover emission limits, reporting (eg. semiannual reports to the enforcement agency) and recordkeeping.

NOTE NSPS projects also require construction review permits. All of these permits are covered in Title I. Therefore, the standards and emission requirements may differ between Title I and V permits. Never-the-less, NSPS covered construction projects will **also** need to apply for a Title V **operating** permit.

The categories of a major source and a major modification will vary, depending on the classification zone where the facility is located. For example,the requirements for VOCs are:

	Major Source	**Major Modification**
Classification	Threshold	Threshold
Marginal	100 TPY	40 TPY
Moderate	100 TPY	40 TPY
Serious	50 TPY	25 TPY
Severe	25 TPY	25 TPY
Extreme	10 TPY	0 TPY

Sources Requiring Title V Permits

1. Major Sources

- major sources of hazardous air pollutants in Title III (CAA section 112);
- major sources defined under CAA section 302 with the "potential to emit" 100 tpy or more **of any regulated air pollutant** *;

♦ major sources in nonattainment areas with the potential to emit the following levels of pollutants (consult State Implementation Plan):

* **A regulated air pollutant is defined as:**
1. • nitrogen compounds or any volatile organic compounds;
• any pollutant for which a national ambient air quality standard has been promulgated;
• any pollutant that is subject to any standard promulgated under section 111 of the Act;
• any Class I or II substance subject to a standard promulgated under or established by title VI of the CAA;
• any pollutant subject to a standard promulgated under section 112 or other requirements established under section 112 of the CAA Act.
2. any other hazardous air pollutant sources covered by CAA section 112;
3. NSPS sources which must apply for an operations permit under CAA section 111;
4. affected sources under the acid rain provisions of title IV;
5. any source which must have a preconstruction review permit pursuant to the requirements of the prevention of significant deterioration (PSD) program (Title I, part C) **OR** the nonattainment area new source review (NSR) program (Title I, part D);
6. any other source in a category which the EPA designates, in whole or in part, by regulation after notice and comment.

PERMIT APPLICATION

Title V permit applications require:

- source and emission identification (including fugitive emissions)
- information on applicable requirements of the Act
- compliance status information
- compliance plan and operating regimes

MOBILE SOURCES

The petroleum industry and automobile manufacturers are the industries most subject to mobile source regulations. However, other businesses and industries are also affected by the CAA. Some of the areas to which BOP facilities may need to comply are:

- service stations
- fleet vehicles

Service Stations

Facilities which operate their own vehicle service stations are subject to a number of regulatory provisions:

- vehicle emission inspection/maintenance (I/M) programs
- controls for reducing gasoline vapors produced during refueling (Stage II controls)
- alternative fuels

Fleet Vehicles

Facilities which operate fleet vehicles (10 or more vehicles = a fleet) in nonattainment areas, may be required to purchase a certain percentage of zero emissions or low source emissions vehicles.

Fleet vehicles include buses, vans and delivery trucks.

Vehicle Emission Inspection and Maintenance (I/M)

The I/M program requires testing of vehicle emissions and requires repairs for vehicles which are not in compliance.

There is a specific regulation regarding I/M programs and Federal facilities (40 CFR Part 51.356). This regulation states that vehicles operated on Federal installations within an I/M area must all be tested.

The I/M standards will differ state to state and also their stringency depends on within which classification zone (marginal, serious, extreme) the facility is located.

Alternative Fuels

Facilities in nonattainment areas which have their own service stations may be required to use low polluting "reformulated" gasoline and oxygenated fuels to operate their vehicles.

OZONE DEPLETING SUBSTANCES

Title VI section 602 divides stratospheric ozone depleting substances into two categories:

Class I	are the most potent ozone-depleting substances (eg. chlorofluorocarbons, carbon tetrachloride, halons and methyl chloroform);
Class II	are also ozone-depleting substances, however, their effects are less potent compared to the Class I substances (eg. hydrochlorofluorocarbons);

A listing of Class I and II substances can be found in 40 CFR Part 82, Subpart A, Appendices A & B.

The following items are covered by Title VI:

- venting restrictions (section 608)
- motor vehicle air conditioning requirements (section 609)
- CFC labeling requirements (section 611)
- "nonessential" product bans (section 610)
- phaseout requirements (section 604)

For other regulations which cover CFCs see:

- TSCA (Chapter IX, Hazardous Materials Management)
- Executive Orders #12843, 12844 and 12845

Section 613 of the CAA also specifically addresses the Federal government. This section covers government procurement of goods and services involving CFCs, requiring that maximum efforts be made by Federal agencies to increase the use of CFC substitutes.

VENTING RESTRICTIONS

Under section 608, ozone depleting substances **can not** be vented into the atmosphere during maintenance, service, repair or disposal operations (40 CFR, Subpart F, parts (82.150 to 82.166)). However, there are exceptions:

- "de minimis" releases are not prohibited if they occur during recapture, recycle and safe disposal operations if proper procedures were followed (eg. leaks and mechanical purging);

- hold charge and leak test gases such as nitrogen mixtures and R-22.

Section 608 establishes regulations on:

1. practices that maximize recycling of ozone-depleting compounds during service and disposal of air-conditioning and refrigeration equipment;

2. certification requirements for recycling and recovery equipment, technicians and reclaimers (see attached copy of the EPA Refrigeration Recovery or Recycling Device Acquisition Certification Form;

3. restriction of refrigerant sale to only certified technicians;

4. servicers and disposers of air-conditioning and refrigeration equipment must certify to the EPA that they are complying with the regulations (EPA form entitled Refrigerant Recovery or Recycling Device Acquisition Certification Form;

5. repair of substantial leaks in air-conditioning and refrigeration equipment with a charge of greater than 50 pounds;

6. establishing safe disposal requirements to ensure removal of refrigerants from items which enter the waste stream intact (eg. refrigerators, room air conditioners, automobile air conditioners)

Evacuation Requirements
(40 CFR Part 82.156 & 82.158)

As of July 13, 1993 technicians had to adhere to evacuation criteria for air-conditioning and refrigeration equipment.

Required Levels of Evacuation for Appliances (Excluding small appliances*, MVACs and MVAC like appliances) MVAC = motor vehicle air conditioners		
Type of Equipment	Inches of Vacuum Required** For equipment manufactured: Before Nov. 15, 1993	On or After Nov. 15, 1993
HCFC-22 appliance** normally containing less than 200 pounds of refrigerant	0	0
HCFC-22 appliance** normally containing 200 pounds or more of refrigerant	4	10
Other high pressure appliances** normally containing less than 200 pounds of refrigerant (CFC-12, -500, -502, -114)	4	10
Other high pressure appliances** normally containing less than 200 pounds of refrigerant (CFC-12, -500, -502, -114)	4	15
very high-pressure equipment	0	0
low-pressure equipment (CFC-11, HCFC-123)	25	25 mm Hg absolute

* for small appliances (eg. household refrigerators, household freezers, water coolers) technicians are required to recover 80-90 percent of the refrigerant.

** relative to standard atmospheric pressure of 29.9" Hg

*** Or isolated component of such an appliance

MVAC-like Appliances

Some air-conditioner systems covered by section 608 (eg. boats, airplanes, construction equipment, farm vehicles) are identical to motor vehicle air conditioners (MVACs) but are not covered under section 609 because they are not motor vehicles. Nevertheless, the EPA is applying MVAC rules to these systems as well.

Refrigerant Leaks

Equipment with charges of greater than 50 pounds must have any substantial leaks repaired:

Requirements for Refrigerant Leaks for appliances with more than 50 lbs of charge	
Appliance	Percent Annual Leak for Which Repairs Begin to be Required
industrial/commercial refrigeration sectors	35
comfort cooling chillers	15
all other equipment	15

Owners and operators must keep records of the quantity of refrigerant added to their equipment during service and maintenance.

Disposal

If refrigerants are recycled or reclaimed, then are not considered hazardous.

NOTE: Oil and other materials removed from air conditioning or refrigeration equipment may be considered hazardous. Call the RCRA hotline for any clarification (800/424-9346 or 703/920-9810).

Records

Facilities must keep the following records per EPA's notification letter regarding CFC venting violations, Office of Air Quality Planning and Standards, Air Enforcement Division:

- copy of all service invoices for any service, maintenance,

repair or disposal performed on appliances at the facility;

- records indicating the number of appliances serviced, maintained, repaired or disposed of at the facility;

- records indicating the amount of refrigerant consumed during the service maintenance, repair or disposal of any appliances at the facility;

- records indicating the amount of refrigerant recovered or recycled during the service, maintenance, repair or disposal of any appliances at the facility;

- records indicating the type of equipment used to recover or recycle refrigerant contained in appliances during the service, maintenance, repair or disposal of any appliances at the facility;

- records indicating any other method used to prevent the release of refrigerants into the atmosphere during the service, maintenance, repair or disposal of any appliances at the facility;

Certification

Technician Certification
(40 CFR Part 82.161)

Effective November 14, 1994, persons who maintain, service, or repair appliances (except MVACs which are dealt with in a separate section) must be properly certified.

Equipment Certification
(40 CFR Part 82.162)

Effective by August 12, 1993 or within 20 days of commencing business for those persons not in business at the time of promulgation, persons maintaining, servicing or repairing appliances (except for MVACs which are dealt with in a separate section) and persons disposing of appliances must certify to the Administrator that the equipment is certified recovery or recycling equipment and is complying with the applicable requirements.

This certificate must be signed by the owner or another responsible officer and must:

- state the name and address of the purchaser, including the county name;

- state name and address of the establishment where equipment is located;

- the manufacturer name, date of manufacture and if applicable the model and serial number of the equipment;

- contain a statement that the equipment will be properly used in the servicing or disposing of appliances.

- must be sent to the appropriate enforcement agency (these addresses vary state to state, therefore, see 40 CFR Part 82.162 (a)(5) for a listing and the accompanying addresses of these agencies).

MOTOR VEHICLE AIR CONDITIONERS

Title VI section 609 requires recycling and recovery of Class I and Class II substances used in motor vehicle air conditioning (MVAC) systems. This section also mandates that (40 CFR Subpart D (Parts 82.30 to 82.42)):

- As of January 1, 1993, all persons servicing motor vehicle air conditioners must have certified to the EPA that they had acquired and were properly using approved equipment, and that all technicians were certified (40 CFR Part 82.34):

  - **Recycling & Recovery Equipment**:
    (40 CFR Part 82.36)

  must be certified by Underwriter Laboratory (UL);

  AND

  meet the Society of Automotive Engineers (SAE) J-standards.

  - **Training**:
    (40 CFR Part 82.40)

    must be as stringent as the National Institute for Automotive Service Excellence's (ASE) certification program;

    OR

    the Mobile Air Conditioning Society's (MACS) training program.

- procedures involving lowest achievable levels, maximum recycling and safe disposal of Class I substances be followed;

- venting of Class I and Class II substances during service or disposal is prohibited;

- Owners/operators must verify that they are complying with the regulations by submitting the EPA MVAC Recover/Recycle or Recover Equipment Certification Form.

See 40 CFR Part 82, Subpart B, Appendix A for a discussion of the standard for recycle/recovery equipment and a recommended service procedure for the containment of R-12.

Recordkeeping
(40 CFR Part 82.42 (b))

All required records must be kept on site and maintained for a minimum of three years.

- owners of approved refrigerant recycling equipment certified under 40 CFR 82.36(a)(2) must maintain records of the name and address of any facility to which the refrigerant is sent.

- any person who owns approved refrigerant recycling equipment must retain records demonstrating that all persons authorized to operate the equipment are currently certified under 40 CFR Part 82.40.

Certification
(40 CFR Part 82.42 (a))

Any person repairing or servicing motor vehicle air conditioners shall certify to the Administrator that such person has acquired and is properly using, approved equipment and that each individual authorized to use the equipment is properly trained and certified.

This certification must:

- be signed by the equipment owner or another responsible officer;

- provide name of purchaser of the equipment;

- state address of establishment where equipment is located;

- provide manufacturer name and equipment model number, date of manufacture, and serial number of the equipment.

- contain statement that equipment will be properly used to service motor MVAC.

The certification must be sent to:

MVACs Recycling Program Manager
Stratospheric Ozone Protection Branch (6202-J)
U.S. Environmental Protection Agency
401 M Street, SW.
Washington D.C. 20460

CFC LABELING REQUIREMENTS

As of May 15, 1993, section 611 required that certain containers and products need special labeling (40 CFR, Subpart E, Parts 82.100 to 82.124).

The label must state:

> WARNING: Contains [substance name], a substance that harms public health and environment by destroying ozone in the upper atmosphere.

Although this section mainly affects manufacturers, distributors, wholesalers and retailers of products containing ozone-depleting substances, BOP facilities which are shipping off any Class I or II products for recycling or disposal also need to comply with this labeling requirement.

To determine if a container needs to be labeled, contact:

Labeling Program Manager
Stratospheric Protection Division
Office of Atmospheric Programs, 6202-J
401 M Street SW
Washington, DC 20460

OR call the stratospheric ozone hotline (800\296-1996)

PHASEOUT REQUIREMENTS

Under section 604, all Class I and II chemicals are being phased out by the EPA. Most Class I chemicals will be phased out by the year 1996. The schedule for Class II chemicals extends between 2003 to 2030.

This regulation allows companies to trade allowances for production and consumption of listed chemicals.

BOP facilities will be affected by eventually having to replace currently used Class I and II substance with acceptable replacement.

ENVIRONMENTAL EXECUTIVE ORDERS

Order #12843

Under this Order, Federal agencies must begin immediately to minimize the acquisition of the most potent (Class I) ozone-depleting substances and to maximize the use of safe alternatives.

Order #12844

Commits the Federal government to accelerate its existing schedule of purchasing alternative fuel vehicles.

Order #12845

Directs the Federal government to purchase only Energy Star computer equipment, which saves energy by automatically entering a low-power, standby state when inactive.

IX. HAZARDOUS MATERIALS MANAGEMENT

TOXIC SUBSTANCES CONTROL ACT

The majority of the Toxic Substance Control Act does not apply to BOP facilities since they will not be manufacturing, distributing or processing (into another type of chemical product) TSCA classified chemicals.

Even if a TSCA chemical is used during a BOP manufacturing process, the law does not affect end products which can be bought directly off the shelf.

This means that BOP facilities most likely will never have to deal with the Pre-manufacture Notification (PMN), Significant New Use Notification (SNUN), or Chemical Testing requirements called out in TSCA.

> **However**, Section 6 of TSCA **may** affect BOP facilities. This section deals with TSCA's regulation of existing chemical substances.
>
> At present, there are only 5 substances which TSCA has closely regulated or prohibited:
>
> - asbestos
> - polychlorinated biphenyls (PCBs)
> - dioxins
> - chlorofluorocarbons (CFCs)
> - certain nitrosamine producing mixtures

TSCA also prohibits the use of hexavalent chromium-based water treatment chemicals
in comfort towers, but these chemicals are not prohibited for use in industrial cooling towers and closed water systems (40 CFR 749.68 (e)).

Asbestos
(ref. EPA 20T-2003)

In July 1989, under TSCA, EPA promulgated an Asbestos Ban and Phaseout Rule. This ban has three stages, the first of which began in 1990. The rule prohibits the importation, manufacture and processing of 94 percent of all remaining asbestos products in the United States over a seven year period.

The following laws also deal with asbestos:
OSHA (29 CFR parts 1926.58, 1910.1001, 1910.134)
EPA Worker Protection Rule (40 CFR 763 Subpart G, Asbestos Abatement Projects)
EPA National Emission Standards for Hazardous Air Pollutants (NESHAP) (40 CFR Part 61 Subpart M)
RCRA (some states have used RCRA to classify asbestos as a hazardous waste).

(See Chapter VI, Worker and Employee Protection for more information on EPA Worker Protection Rule; Chapter VIII, Air Resources Management (Hazardous Air Pollutants) for more information on NESHAP).

Potential asbestos containing materials are:

- **surfacing materials** - Asbestos-containing materials (ACM) sprayed or trawled onto surfaces (e.g. decorative plasters, acoustical ACM on the underside of concrete slabs or decking) fireproofing materials.

- **thermal system insulation (TSI)** - ACM applied to pipes, boilers, tanks and ducts to prevent heat loss or gain, or condensation.

- **miscellaneous ACM** - ceiling and floor tiles, textiles, cement panels, siding and roofing materials.

Training

Both OSHA and the EPA require a worker training program for all employees exposed to fiber levels at or above the action level (0.1 f/cc. 8-hour time-weighted average) and/or the excursion limit (1.0 f/cc, 30 minute TWA). For information on asbestos training, see the necessary regulations discussed above.

Some states and municipalities may have specific asbestos training requirements for employees who work in a building with ACM present.

Forms

- EPA Form 7710-36/reporting chemical and industrial uses of asbestos

- EPA Form 7710-37/reporting secondary processing and importation of asbestos mixtures

- 40 CFR part 61.145, figure 3 Notification of Demolition and Renovation

Documents

EPA 20T-2003 Managing Asbestos in Place (also covers training information)**PCBs**

TSCA banned (with limited exceptions) the manufacture, processing, distribution in commerce and use of PCBs other than in a "totally enclosed manner".

After this ruling went into affect, it was required that all PCB containing products be properly marked and labeled by the manufacturer. Products which contain PCBs have special disposal requirements. In 1989, a PCB manifest and tracking system was implemented.

Potential PCB containing materials:

- insulators in electrical equipment (manufactured prior to 1979)
- capacitors, switches, voltage regulators
- dielectric fluids, contaminated solvents, oils, waste oils, heat transfer fluids, hydraulic fluids
- fluorescent light ballasts

Several EPA publications exist which discuss the correct disposal methods for PCB containing light ballasts. These requirements are applicable only for leaking light ballasts.

There may also be specific state PCB-containing ballast disposal requirements.

Documents

- EPA 430-F-92-009 Light Brief has section on PCB containing fluorescent light ballasts
- EPA 430-F-93-002 Fluorescent Lamp Disposal
- EPA PCB Q&A Manual (is an informal document available from the TSCA hotline.

Dioxins (40 CFR Part 766)

TSCA requires chemical manufacturers and processors to ascertain whether certain specified chemical substances may be contaminated with halogenated dibenzodioxins. BOP facilities should not be affected by this section, since they are not normally involved in any of these operations.

CFCs (40 CFR Part 762)

TSCA prohibits the manufacture, processing and distribution of fully halogenated chlorofluoroalkanes. BOP facilities should not be affected by this section, since they are not involved in any of these operations.

See Chapter VIII, Air Resources Management for more information on CFCs.

Nitrosamine Producing Mixtures (40 CFR Part 747)

TSCA prohibits any person using metalworking fluids which contain either mixed mono and diamides of an organic acid (PMN# P-84-529), triethanolamine salt of a substituted organic acid (PMN# P-84-310) or triethanolamine salt of tricarboxylic acid (PMN# P-83-1005) from adding nitrosating agents to these products.

EXECUTIVE ORDER 12856 (Toxic Chemicals)

Each Federal agency must establish a plan and goals for eliminating or reducing the unnecessary acquisition of products containing extremely hazardous substances or toxic chemicals. The plan should encompass products that the Federal agency processes and uses. Each Federal agency must also review its specifications and other standardized documents, and identify opportunities to eliminate or reduce the acquisition of extremely hazardous substances and toxic chemicals. The review of these documents must be conducted by August 3, 1995, with appropriate revisions completed by 1999.

To be responsive to the directives of this Order each BOP facility should develop their own site specific plan in the form of an Institutional Supplement. Those facilities that fall under EPCRA's reporting criteria for filing a Form R (report form for EPA's national Toxic Release Inventory program) are required to be specific in their plan and state how their contributions will assist the agency in its overall reduction in use of toxic materials by 50% by the year 2001.

All Federal facilities which manufacture, process or use toxic chemicals are now also required by Executive Order 12856, to publicly report their wastes and releases under the Emergency Planning and Community Right-to-Know Act (EPCRA). The first of these toxic release reports is/was due on or before July 1, 1995, covering the 1994 calendar year. (See Chapter V, Community Right-to-Know)

Note: For an overview of this and other Executive Orders that have direct application to BOP operations reference EPA's document Pollution Prevention in the Federal

Government Doc. #300-B-94-007

X. NONHAZARDOUS WASTE MANAGEMENT

Oil

Used oil should not be disposed of in the trash or down the sewage or storm drain. There are proper procedures for used oil disposal. See used oil section, Chapter XI - Hazardous Waste Management.

CFCs

Products containing CFCs (e.g. air conditioner units, refrigerators, motor vehicle air systems) need to be disposed of properly. Records must be kept regarding the disposal of these appliances. The recovered refrigerant can be recycled if it meets certain criteria. Recovered refrigerant which is to be disposed of may be considered hazardous. See CFC section, Chapter VIII - Air Resources Management

Sewage Sludge
(40 CFR Part 503)
(58 Federal Register #9428, February 19,1993)

New regulations have been published by EPA which establish a sewage sludge management program incorporating application for permits, monitoring sludge for pathogens, monitoring sludge for 10 different metals, identifying a site manager, and additional record keeping requirements. These new requirements went into effect on August 18, 1993, when permit applications were due. In the event your facility operates a sewage treatment facility, check with your local regulatory agency to see if your facility must comply with these regulations and what permit and testing procedures may apply.

Executive Order 12873

This Order, along with RCRA Subpart D, requires each agency to establish a goal for solid waste prevention and a goal for recycling to be achieved by 1995. An annual report on progress in achieving these goals is also required by each Federal agency. The BOP currently operates recycling programs at all facilities in an effort to be responsive to the initiative of this Order.

Federal agencies are also required to buy products containing recovered materials of which are considered environmentally preferable. This activity is directed within the Bureau under DOJ's Order addressing Affirmative Procurement Programs for recycled goods. Federal agencies must review and revise specifications and product descriptions and standards to promote the acquisition of environmentally preferable products and products made from recycled or recovered materials.

BOP Recycling Programs

All Bureau of Prisons facilities, departments and offices are to operate a comprehensive Environmental Awareness/Pollution Prevention Program designed to use source reduction techniques and sound recycling practices. In addition, each BOP facility and administrative office must establish a cost effective Affirmative Procurement Program consistent with E.O. 12873, as referenced in Section 6002(i) of the Resource Conservation and Recovery Act and 42 U.S.C. 6962(c)(1).

The following four elements are to be addressed by each BOP facility in the development and implementation of a comprehensive Environmental Awareness/Pollution Prevention program:

a. During procurement procedures, efforts will be made to purchase items which promote recycling and/or source reduction.

b. Examine areas where conservation initiatives can be implemented and waste reduction measures employed.

c. Initiate a viable cost effective recycling program incorporating all core recycling items as listed in Attachment A.

d. Establish an institution environmental committee as described to address the environmental concerns and recycling activities.

A facility Environmental Concerns Committee is to be operated and chaired by the AWO and be comprised of the institution's Safety Manager, Facility Manager, Controller, Food Service Administrator, UNICOR Superintendent (AW I&E), and the Environmental Concerns Coordinator appointed by the Warden.

The Environmental Concerns Committee shall meet quarterly to review all active environmental initiatives and the effectiveness of the institution's recycling programs.

The institution's Environmental Coordinator shall submit a quarterly update report to be reviewed at the quarterly Committee meetings. The quarterly update report shall also be entered into SENTRY's Recycle Report (PGFR) for data gathering purposes.

The institution's Environmental Coordinator's responsibilities include serving as the institution's community liaison to cultivate recycling opportunities to meet the institution's needs. In addition, it will be incumbent upon the Environmental Coordinator to ensure the institution's program complies with state and Federal pollution prevention programs and regulations. The local Environmental Protection Agency must be apprised in

writing as to the proposed recycling activities in which the facility intends to participate. This letter of notification must be kept on file at the institution with a copy forwarded to the Regional Safety Administrator.

Each institution is to develop a cost effective program to recycle, at a minimum, paper, plastic, metals, glass, used oils, lead acid batteries, CFCs, and tires.

If a cost effective program cannot be established for any of these materials, a written justification must be included in the program's files which indicates the efforts made and the reasons for excepting a core material from the institution's recycling program. Any exemption must be supported by documentation which outlines the financial restrictions which preclude it from being considered cost effective. Included with this justification must be records which clearly indicate the attempts made to find potential recycling contractors that could process this material cost effectively.

Composting programs shall also be included as a component of recycling programs but will be limited only to yard waste. Consideration may be given to an institution's request to operate a full scale composting program if the facility can demonstrate that the necessary resources are available. An institution's program proposal to operate a **full scale** composting program must first be submitted to the Bureau's Chief Environmentalist for evaluation and forwarding to the Executive Staff for approval.

Full scale composting programs, which incorporate multiple organic wastes, shall be evaluated on criteria such as topography, surface of the proposed site location, operating equipment, materials to be composted, knowledge/training of Composting Program Manager, Site Operating Plan, and the availability of applicable operating permits such as Storm Water Discharge Permits and/or NPDES Permits. Improperly managed composting programs incorporating organic materials such as food waste and sewage sludge can pollute the environment through pathogenic leachates creating serious health hazards. For this reason, prudent planning must precede program implementation.

Each Environmental Coordinator shall collect and disseminate comprehensive data to the Central Office quarterly. All program data shall be transmitted via SENTRY. The quarterly Recycle Report is due in the Central Office not later than 30 days after the end of each quarter. The "Recycle Report" forms can be accessed by the "PGFR" command in SENTRY. Detailed instructions for this operation are located in the SENTRY General Use Manual, Chapter 6, Pages 1-10. A sample Environmental Report with efficiency factors calculated through dBase is attached as "Sample Report".

The Chief Environmentalist shall provide the Regional Offices with ongoing data base reports which illustrate trends, accomplishments, and program success/failure. These agency wide statistical reports are provided as an administrative instrument to assist in program management and development.

Annually, the Bureau's Chief Environmentalist shall compile all of the information obtained from the institutions' recycling programs into a consolidated report. This report shall be provided to the Executive Staff for review, then forwarded to EPA as required in E.O. 12873. EPA in turn will synopsize all agencies' compiled reports and forwards them to OMB.

The following conversion table is provided to assist in preparation of the Recycle Report:

VOLUME TO WEIGHT CONVERSION SCALE

Material	Volume	Weight in lbs.
Newsprint (loose)	One Cubic Yard	360 - 800
Newsprint (compacted)	One Cubic Yard	720 - 1000
Newsprint	12" Stack	35
Glass (whole bottles)	One Cubic Yard	600 - 1000
Glass (semi-crushed)	One Cubic Yard	1000 - 1800
Glass (mech. crushed)	One Cubic Yard	800 - 2700
Glass (whole bottles)	Grocery Bag	16
Glass (uncrushed)	55 Gallon Drum	125
Glass (manually broken)	55 Gallon Drum	500
PET Soda Bottles		
PET (whole & loose)	One Cubic Yard	30 - 40
PET (baled)	30" x 62"	500
PET (granulated)	30" x 42" X 48"	1000
Aluminum Cans (whole)	One Cubic Yard	50 - 74
Aluminum Cans (flattened)	One Cubic Yard	250
Corr. Cardboard (loose)	One Cubic Yard	300
Corr. Cardboard (baled)	One Cubic Yard	1000 - 1200
Grass Clippings	One Cubic Yard	400 - 500
Used Motor Oil	One Gallon	7
Tire (passenger car)	One	12
Tire (truck)	One	60

Each institution should develop an Institutional Supplement to develop staff awareness and outline a cost effective environmental awareness/pollution prevention policy of source reduction, recycling, and an affirmative procurement program.

XI. HAZARDOUS WASTE MANAGEMENT

Several laws must be consulted while involved in hazardous waste management activity (eg. RCRA, 40 CFR Parts 260 to 270; OSHA (HAZWOPER); CERCLA), however, RCRA is the only one which regulates these substances from their generation all the way through to proper storage, transport and their eventual disposal. RCRA imposes what is known as a "cradle to grave" management system.

Please be familiar with your local and state hazardous waste regulations, as well as the Federal requirements discussed below.

WHAT ESTABLISHES A HAZARDOUS WASTE ?

A hazardous waste can be a solid, liquid, or gas which because of its quantity, concentration, physical properties, chemical constituents, or infectious characteristics qualify it as a hazardous waste if it can (40 CFR part 257.2, 258.2, 261.3):

- cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness;

OR

- pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported or disposed of or otherwise managed.

There are numerous ways a waste can be classified as being a hazardous waste:

1. if it has been given an EPA Hazardous Waste Number by one of the following lists in 40 CFR part 261 Subpart D (List of Hazardous Wastes):

   - hazardous wastes from specific sources or "K-listed" wastes
   - acutely hazardous wastes or "P-listed" wastes
   - discarded commercial chemical products or "U-listed" wastes
   - hazardous wastes from non-specific sources or "F-listed" wastes

   For reference purposes, there are two appendices which list hazardous constituents:

- appendix VII - basis for listing hazardous waste
- appendix VIII - alphabetical listing

2. if the substance meets any of the EPA defined "characteristics" of a hazardous waste such as ignitable, corrosive, reactive, or toxic. (40CFR, part 261, Subpart C)

3. the material is a mixture containing a listed hazardous waste

4. if it is a material derived from treatment, storage or disposal of a listed hazardous waste.

40 CFR Part 260, Subpart C - Appendix I, is an excellent overview for addressing the requirements of a hazardous waste control program. This section provides definitions for both solid waste and hazardous waste. It also reviews the hazardous waste regulations.

When seeking clarification of what is a hazardous waste, please reference the sections in 40 CFR listed below:

Identification of Hazardous Wastes	**40 CFR, PART**
criteria for identifying the characteristics of hazardous wastes	261, subpart B
characteristics of hazardous wastes	261, subpart C
lists of hazardous wastes	261, subpart D
definition of solid waste	260, Appendix I and figure 1; part 261.2
definition of hazardous waste	260, Appendix I and figure 2; part 261.3

CHARACTERISTICS OF HAZARDOUS WASTE

One way a waste can be classified as being hazardous is if it meets any of the four characteristics defined in 40 CFR part 261, subpart C:

- ignitability
- corrosivity
- reactivity
- toxicity

Ignitability

Is a waste that is easily combustible or flammable. An ignitable waste may exhibit some of the following properties:

- is a liquid, except aqueous solutions containing less than 24 percent alcohol, that has a flash point of less than 60

degrees Centigrade (140 degrees Fahrenheit)

- is a non-liquid capable, under normal conditions of spontaneous and sustained combustion

- is an ignitable compressed gas, per Department of Transportation (DOT) regulation CFR 49 Part 173.300 (a)

- is an oxidizer, per DOT regulation CFR 49 Part 173.151.

Examples of ignitable wastes include waste solvents.

Corrosivity

Is a waste that is corrosive to the eyes, skin and metals and may exhibit the following properties:

- is an aqueous material with pH less than or equal to 2 OR a pH greater than or equal to 12.5

- is a liquid that corrodes steel at a rate greater than 1/4 inch per year at a temperature of 55 degrees Centigrade (130 degrees Fahrenheit)

Reactivity

Is a waste (eg. water from TNT operations, used cyanide solvent) that may exhibit any of the following properties:

- normally unstable and reacts violently without detonating

- reacts violently with water, forms an explosive mixture with water or generates toxic gases, vapors or fumes when mixed with water

- contains cyanide or sulfide, and generates toxic vapors or fumes at a pH of between 2 and 12.5

- capable of detonation if heated under confinement, or if subjected to containment or subjected to a strong initiating source

- capable of detonation at standard temperature and pressure

- listed by DOT as a Class A or B explosive (CFR 49 parts 173.53 and 173.88)

Toxicity

Is any chemical substance which, when ingested, inhaled, absorbed or otherwise enters the body, may cause significant bodily malfunction, injury, illness or death.

In order to identify whether a waste has this characteristic a toxicity characteristic leaching procedure may need to be

conducted.

USED OIL

Used Oil

> is any oil that has been refined from crude oil, or any synthetic oil, that has been used and as a result of such use is contaminated by physical or chemical impurities.

Although used oil may bare the characteristics of a hazardous waste (eg. ignitability), it is not classified as such unless it has been mixed with a listed hazardous waste OR if it has halogen concentrations in excess of 4,000 ppm (40 CFR part 279).

NOTE: If used oil contains a total halogen concentration in excess of 1,000 ppm, it is generally assumed that it contains a listed hazardous waste (§279.11 (ii)).

Used oil generators are subject to all applicable Spill Prevention, Control and Countermeasures (40 CFR part 112) in addition to the Underground Storage Tank requirements (40 CFR part 280).

Used Oil Storage

- Storage Units: used oil generators shall not store used oil in units <u>other than</u> regulated tanks, containers or units (§ 279.22)

- Condition of units: containers and aboveground storage tanks used to store used oil must be:

  1. in good condition (e,g, no severe rusting, apparent structural defects or deterioration)

  2. not leaking (no visible lines)

- Labels:

  1. containers and aboveground tanks used to store used oil must be labeled or marked clearly with the words "Used Oil".

  2. fill pipes used to transfer used oil into underground storage tanks must be labeled or marked clearly with the words "Used Oil".

- Releases: if there is a release of used oil into the environment, the following cleanup steps must be implemented:

  1. stop the release;

2. contain the released used oil;

3. clean up and manage properly the released used oil and other materials;

4. if necessary to prevent future releases, repair or replace any leaking used oil storage containers or tanks prior to returning them to service.

TOXICITY CHARACTERISTIC LEACHING PROCEDURE (TCLP)

This is a laboratory test which subjects a waste to a leaching procedure similar to what is going on in a landfill (40 CFR Part 261.24).

The test extracts constituents from the waste and this extract is then analyzed to determine if any concentrations are equal to or greater than the required EPA levels. If any of the levels are exceeded, the waste is classified as being hazardous. The constituents measured in this test are:

arsenic	hexachlorobenzene
barium	hexachlorobutadiene
benzene	hexachloroethane
cadmium	lead
carbon tetrachloride	lindane
chlordane	mercury
chlorobenzene	methoxychlor
chloroform	methyl ethyl ketone
chromium	nitrobenzene
o-cresol	pentachlorophenol
m-cresol	pyridine
p-cresol	selenium
cresol	silver
2,4 - D	tetrachloroethylene
1,4 - dichlorobenzene	toxaphene
1,2 - dichloroethane	trichloroethlene
1,1 - dichloroethylene	2,4,5 - trichlorophenol
2,4 - Dinitrotoluene	2,4,6 - trichlorophenol
endrin	2,4,5 - TP (Silvex)
heptachlor	vinyl chloride

For the regulatory levels (mg/L) of these contaminants, see Table #1 in § 261.24.

DETERMINING WHETHER A WASTE IS HAZARDOUS

The following is designed to be a simplified guide to deciding whether or not you have a hazardous waste. The actual determination process will most likely be much more complicated, involving laboratory analyses and consultations with hazardous waste contractors, particularly if you are dealing with a mixture.

If you have a chemical that has become a waste, check the Material Safety Data Sheet (MSDS) to see if it addresses

disposal. Disposal information can be found in Section VII of the MSDS; recommendations may include incineration, landfill burial, scrap recovery, a licensed waste disposal firm, flushing with water, return of material to original container, etc.

Cautions concerning disposal may also appear in this section, such as "do not flush to sewer" or "do not incinerate". If specific information is not provided on the MSDS, the manufacturer or supplier can sometimes provide recommendations and information if consulted. If specific recommendations are provided, follow them. If the material can be recycled, please arrange for recycling.

If the MSDS is not available, or does not address disposal, determine if the material is a "Listed" waste. Chances are, your waste will not appear on the lists. If it does, however, the waste is hazardous and must be dealt with accordingly.

If you do not find your waste on the EPA lists, your next step is to determine if it exhibits "hazardous characteristics". This is where a laboratory analyses will come in. The TCLP procedure, for instance, must be performed by a lab. If the material is not determined to be hazardous (e.g., it is neither listed nor has hazardous characteristics), disposal becomes a simple matter.

> However, a word of **caution**: you must be absolutely certain that your waste is not hazardous. Retain copies of the lab work which prove that the material was tested and be careful not to assume that because one waste was non-hazardous, that similar wastes will also be non-hazardous.

If you find that your waste is indeed hazardous, you have entered the RCRA loop as a "hazardous waste generator" and must comply with the RCRA requirements for proper management and disposal procedures.

ACUTELY HAZARDOUS WASTE

The EPA has a list of substances, the "P-list", which have been categorized as **acute hazardous wastes**. This list can be found in 40 CFR Part 261.33.

Facilities which generate 1 kg, or more, of an acute hazardous waste can not claim "conditionally exempt" status under RCRA as a small quantity generators. Moreover, those facilities which generate more than 1 kg of an acute hazardous waste are then classified as a large quantity generator regardless of the amount of non-acute hazardous waste being generated.

HAZARDOUS WASTE GENERATOR

Previously, businesses producing less than 1000 kilograms (2,200 pounds) of hazardous waste, were exempt from most of the hazardous waste regulations. However, in November 1984, the Hazardous and Solid Waste Amendments to RCRA were passed. These

amendments established new requirements for small quantity generators, producing 100 to 1000 kilograms of hazardous waste.

A generator is defined as "any person, by site, whose act or process produces hazardous waste identified or listed in 40 CFR 261 or whose act first causes hazardous waste to become subject to regulation". Compliance is the responsibility of the generator.

EPA has established three major classes of hazardous waste generators, based upon the quantity of hazardous waste produced at the facility and/or the maximum amount of wastes accumulated and stored at the facility:

1. Conditionally Exempt Small Quantity Generators (CESQGs) are facilities that generate no more than 220 pounds (100 kilograms) of hazardous material within a calendar month.

2. Small Quantity Generators (SQGs) include facilities that generate:

   - between 220 and 2200 lbs (100 and 1000 kg) of waste per calendar month, OR
   - less than 1 kg per month of an acutely hazardous waste.

3. a large quantity generator (LQG) generates:

   - more than 2200 lbs (1000 kg) per month, OR
   - more than 1 kg per month of an acutely hazardous waste.

The majority of BOP facilities are registered as SQGs, however, some do meet the threshold limits as a LQG. Given the fact that it is almost impossible for a BOP facility to stay within the threshold limits required of a CESQG throughout every month of the year, facilities are discouraged from trying to manage their programs based on the requirements of a CESQG.

CONDITIONALLY EXEMPT GENERATOR

The advantage of being a Conditionally Exempt Small Quantity Generator (CESQG) is that the facility is exempt from certain recordkeeping requirements and from having to immediately dispose of their monthly accumulated wastes.

> **However**, if the amount of accumulated waste ever exceeds the CESQG range (100 kg/month), the facility's status changes and additional reporting requirements would **immediately** go into effect. All wastes would have to be disposed of within 180 days.

Although CESQGs are exempt from the hazardous waste generator requirements, they still must:

- keep a record of the types and amounts of hazardous wastes generated, accumulated and stored at the facility each month;

- only generate less than 100 kg of hazardous waste and less than 1 kg of an acutely hazardous waste a month;

- not accumulate more than 1000 kg (five 55-gallon drums) of hazardous waste **at any one time**;

- ensure that any generated hazardous waste is sent to a permitted TSDF.

Note: BOP policy requires that <u>any</u> hazardous waste shipped from a BOP facility follow the RCRA manifesting procedures <u>regardless</u> of generator status. For this reason there is very little advantage to pursue the CESQG status.

SMALL QUANTITY GENERATOR

For facilities generating between 100 to 1000 kg of a hazardous waste per month or 1 kg of an acutely hazardous waste, the following must be met (40 CFR 262.34 (d)):

- generate no more than 1000 kg of hazardous waste and 1 kg of an acutely hazardous waste a month

- not accumulate more than 6000 kg of hazardous waste **at any one time**

- not accumulate hazardous waste on site for longer than 180 days

- keep a record of the types and amounts of hazardous wastes generated, accumulated and stored at the facility each month and adhere to any other recordkeeping and reporting requirements

- comply with the container labeling, dating, handling and management requirements

- follow the required container and tank management criteria (40 CFR subpart I, except §265.176; 40 CFR part 265.201)

- Comply with manifest requirements

- follow Safety and Emergency and Preparedness and Prevention plans (40 CFR 262.34 (d) (5) and 265 subpart C)

- comply with the training requirements (§ 262.34 d(5)iii)

- are also required to follow 268.7 (a)(4) which deals with treating wastes in a container. **HOWEVER**, since BOP facilities should not be treating any of their hazardous waste, this requirement is not applicable.

If a SQG accumulates hazardous waste:

- for more than 180 days
- for more than 270 days if it must be transported over 200 miles
- quantities exceeding 6000 kg

then the facility must have a TSDF permit (§ 262.34 (f)), making it subject to requirements called out in § 264, 265 and the permit requirements in § 270. For this reason it is imperative that the waste materials be managed within the parameters of the SQG generator.

LARGE QUANTITY GENERATOR

BOP facilities generating over 1000 kg of a hazardous waste per month or over 1 kg of an acutely hazardous waste, must consider the following (§ 262.34 a):

- not accumulate hazardous waste on site for longer than 90 days
- Preparedness & Prevention (§ 264 subpart C) and Contingency (§ 264 subpart D) plans called out by § 262.34 a(4)
- comply with the training requirements (§ 262.34 a(4) and 265.16)
- comply with the container labeling, dating, handling and management requirements
- comply with manifest requirements
- keep a record of the types and amounts of hazardous wastes generated, accumulated and stored at the facility each month and adhere to any other recordkeeping and reporting requirements
- LQGs also need to follow special requirements listed in 40 CFR 262.34(1) which include:
    - § 265 subpart I; and/or
    - § 265 subpart J, except §265.197(c) and §265.200; and/or
    - § 265 subpart W and maintain certain records; and/or
    - § 265 subpart DD, a professional engineer certifies that the storage building complies with §265.1101.

NOTE: **As cautioned earlier, if an LQG accumulates hazardous waste for more than 90 days, it is regarded as being a TSDF and needs a special permit.**

EPA IDENTIFICATION NUMBER

All BOP facilities are required to obtain an EPA Generator Identification Number.

To obtain an ID number, the facility may call or write the state hazardous waste management agency or the Regional EPA Office and ask for EPA Form #8700-12 (Notification of Hazardous Waste Activity). Along with the form, EPA also supplies instructions. A helpful guide for hazardous waste generators is Understanding the Small Quantity Generator Hazardous Waste Rules: Handbook for Small Business, EPA/530-SW-86-019.

HAZARDOUS WASTE ACCUMULATION and STORAGE

In addition to obtaining an EPA ID number, generators must follow RCRA storage and permitting requirements. A SQG may accumulate waste (up to 2200 lbs) on site without a TSD permit for 180 days. A LQG may accumulate wastes for only **90 days**. After the specified time limit elapses, a generator becomes a **storage facility** and must apply with EPA for a storage (TSD) permit, as well as meet additional storage facility requirements. It is to the facility's benefit to remove wastes within the prescribed time limit.

During accumulation, the following requirements must be met (40 CFR part 265, subpart I):

1. the waste containers must be clearly labeled with the words "Hazardous Waste", the contents of the container, and the date that the waste are accumulated in the container. The container should also be labeled with the hazard that the waste represents (eg. ignitable, corrosive, reactive, harmful to human health, etc.).

2. containers must be kept in good condition.

3. containers must be kept closed, except when filling them. It is recommended that hazardous waste be stored in dike areas so that spills are contained.

4. the containers must be inspected each week for corrosion, integrity, leaks etc., and an inspection log must be kept, documenting each inspection.

5. ignitable or reactive wastes should be stored as far as possible from the building to create a buffer zone. At least 50 feet is recommended.

6. incompatible wastes should be stored separately so that chemical reactions do not occur. In general, avoid mixing any wastes.

7. the facility must have personnel trained in the proper handling of hazardous waste, as well as a contingency plan to use in the event of an emergency.

SPECIAL REQUIREMENTS FOR SQGs ACCUMULATING WASTE IN TANKS

Generators of between 100 to 1000 kg/mo hazardous waste must comply with the following requirements (40 CFR subpart J, part 265.201 this requirement is called out in § 262.34 (d)(3))

Operating Requirements

1. treatment and storage of hazardous waste in tanks must comply with the following (40 CFR part 265.17(b)):

   the treatment, storage or disposal of ignitable or reactive waste and the mixture or commingling of incompatible wastes and materials, must be conducted so that it does not:

   - generate extreme heat or pressure, fire or explosion, or violent reaction;
   - produce uncontrolled toxic mists, fumes, dusts or gases in sufficient quantities to threaten human health;
   - produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions;
   - damage the structural integrity of the device of facility containing the waste; or
   - through other like means threaten human health or the environment.

2. hazardous wastes or treatment reagents must not be placed in a tank if they could cause the tank or its inner liner to rupture, leak, corrode or otherwise fail before the end of its intended life.

3. uncovered tanks must be operated to ensure at least two feet (60 centimeters) of freeboard, unless the tank is equipped with a containment structure (e.g. dike or trench), a drainage control system, or a diversion structure (e.g. standby tank) with a capacity that equals or exceeds the volume of the top two feet of the tank.

4. where hazardous waste is continuously fed into a tank, the tank must be equipped with a means to stop this inflow (e.g. waste feed cutoff system or by-pass system to a stand-by tank). These systems are intended to be used in the event of a leak or overflow from the tank dueto a system failure (e.g. a malfunction in the treatment process, a crack in the tank, etc.)

Inspection

Where present the following must be inspected:

1. discharge control equipment (e.g. waste feed cutoff systems, by-pass systems and drainage systems) at least once each operating day, to ensure that it is in good working order;

2. data gathered from monitoring equipment (e.g. pressure and temperature gages) at least once each operating day to ensure that the tank is being operated according to its design;

3. the level of waste in the tank at least once each operating day to ensure compliance with (3) in the operating section above;

4. the construction materials of the tank at least weekly to detect corrosion or leaking of fixtures or seams; and

5. the construction materials of, and the area immediately surrounding, discharge confinement structures (e.g. dikes) at least weekly to detect erosion or obvious signs os leakage (e.g. wet spots or dead vegetation).

The owner or operator must remedy any deterioration or malfunction found.

Facility Closure

Remove all hazardous waste from tanks, discharge control equipment and discharge confinement structures. Report closure to state regulatory agency.

Ignitable and Reactive Wastes

1. this waste must be placed in a tank, unless:

   - the waste is treated, rendered or mixed before or immediately after placement in a tank so that

     (a) the resulting waste, mixture or dissolution of material no longer meets the definition of ignitable or reactive waste; and

     (b) it is treated in the manner described in item (1) of the operating section (above); or

   - the waste is stored or treated in such a way that it is protected from any material or conditions that may cause the waste to ignite or react; or

2. the owner or operator of a facility which treats or stores ignitable or reactive waste in covered tanks must comply with the buffer zone requirements for tanks in Tables 2-1 through 2-6 of the National Fire Protection Associations's "Flammable and Combustible Liquids Code".

Incompatible Wastes

1. incompatible wastes, or incompatible materials must not be placed in the same tank, unless item (1) in the operating section (above) is complied with.

2. hazardous wastes must not be placed in an unwashed tank which previously held an incompatible waste or material, unless item (1) in the operating section (above) is complied with.

RESIDUES IN EMPTY CONTAINERS

If any hazardous waste is either left in an empty container or an inner liner removed from an empty container, then it is subject to a number of strict regulations (e.g. 40 CFR parts 261 to 265, 268, 270, 124 and section 3010 of RCRA). However, if the following criteria are met, than these regulations do not apply:

1. a container or an inner liner removed from a container that has held any hazardous waste, except a waste that is compressed gas or that is identified as a RCRA acute hazardous waste, is empty if:

   - all wastes have been removed that can be removed using the practices commonly employed to remove materials from that type of container (e.g. pouring, pumping and aspirating; and

   - no more than 1 inch (2.5 centimeters) of residue remain on the bottom of the container or inner liner; and

     (a) no more than 3 percent by weight of the total capacity of the container remains in the container or inner liner if the container is less than or equal to 110 gallons in size, or

     (b) no more than 0.3 percent by weight of the total capacity of the container remains in the container or inner liner if the container is greater than 110 gallons in size.

2. a container that has held a hazardous waste that is compressed gas is empty when the pressure in the container approaches atmospheric.

3. a container or an inner liner removed from a container that has held an acute RCRA hazardous waste (40 CFR parts 261.31, 261.32 and 261.33(e)) is empty if:

- the container of liner has been triple rinsed using a solvent capable of removing the commercial chemical product or manufacturing chemical intermediate;

- the container or inner liner has been cleaned by another method that has been shown in the scientific literature, or by tests conducted by the generator, to achieve equivalent removal; or

- in the case of a container, the inner liner that prevented contact of the commercial chemical product or the manufacturing intermediate with the container, has been removed.

HAZARDOUS WASTE MANIFEST

All shipments of hazardous waste for off-site treatment, storage or disposal must be accompanied by a hazardous waste manifest. EPA forms #8700-22 and 8700-22A (or the equivalent state manifest) must be used. The hazardous waste manifest is generally provided to the generator by the disposal company. The manifest will most often be from the state in which the waste will be treated, stored or disposed.

The manifest is part of a controlled tracking system. Each time the waste is transferred (eg. from a transporter to a treatment, storage or disposal facility (TSDF), the manifest must be signed by each party to acknowledge the transfer/receipt of the waste. A copy of the manifest must be retained by each link in the transportation chain. Once the waste is delivered to the designated TSDF, the owner or operator of that facility must send a signed copy of the manifest back to the generator. This system ensures that the generator has documentation that their waste has made it to its ultimate destination.

Before a waste leaves the facility, the generator (specifically the representative who is managing the waste disposal) must sign the manifest, and obtain the signature of the transporter and the date of acceptance. The generator must retain the transporter-signed copy of the manifest until the final signed copy arrives from the TSDF.

<u>The final copy must be kept indefinitely, retired to a records center after three years with a microfiche copy at the facility or regional office</u>.

Manifests always contain the following information:

- the name and EPA ID numbers of the generator, transporter(s) and the TSDF. Generators are forbidden from offering their hazardous wastes to any transporter or TSDF that dose not have an EPA ID number.

- U.S. Department of Transportation description of the waste being transported.
- quantities of the waste being transported.

- the address of the TSDF to which the generator is sending the waste. Please note that there are prohibitions on the land disposal of hazardous wastes.

Do not send hazardous waste to landfills.

The final signed copy of the manifest should arrive from the TSDF within 35 days. If 35 days pass (from the date on which the waste was accepted by the transporter), and the generator has not received a signed copy of the manifest, the generator must contact the transporter and/or the TSDF to determine the whereabouts of the waste. If the 45 days pass and the manifest still has not been received, the generator must submit an exception report as explained below. Please note, in some states the "manifest waiting" period is less than 45 days.

Pre-TRANSPORT REQUIREMENTS

Prior to transport of hazardous waste from your facility certain packaging, labeling, marking and placarding criteria must be adhered to.

Packaging (§ 262.30)

Before transporting hazardous waste or offering hazardous waste for transportation off-site, a generator must package the waste in accordance with the applicable Department of Transportation regulations on packaging under 49 CFR parts 173, 178 and 179.

Labeling (§ 262.31)

Before transporting or offering hazardous waste transportation offsite, a generator must label each package in accordance with the applicable Department of Transportation regulations on hazardous materials under 49 CFR Part 172.

Marking (§ 262.32)

Before transporting or offering hazardous waste for transportation off-site, a generator must mark each package of a hazardous waste in accordance with the applicable Department of Transportation regulations on hazardous materials (49 CFR Part 172);

Before transporting hazardous waste off-site, the facility must mark each container with the following words and information clearly displayed (49 CFR 172.304):

```
6444444444444444444444444444444444444444444444444444444447
5    HAZARDOUS WASTE - Federal Law Prohibits Improper Disposal. 5
5    If found, contact the nearest police or public safety     5
5    authority or the U.S. Environmental Protection Agency.    5
9444444444444444444444444444444444444444444444444444444448
```

Generator's Name and Address _____

Manifest Document Number_____

Placarding (§ 262.33)

One of the generators requirements often times overlooked is the requirement for placarding. Before offering hazardous waste for transportation off-site, the facility must offer the initial transporter the appropriate placards according to Department of Transportation regulations for hazardous materials (49 CFR Part 172, Subpart F). Notation should be bade in the manager's files addressing this issue each time a shipment is made.

First responders to a highway accidents resulting in a spills rely on accurate placards being in place to indicate the degree of danger to the response team and the public. In these instances, failure to properly placard shipments of hazardous waste places the persons involved at risk.

Please Note: the regulations make the **"generator"** responsible for supplying the proper placards for hazardous waste shipments.

HAZARDOUS WASTE RECORDKEEPING & REPORTING

RECORDKEEPING

BOP facilities must keep a copy of their hazardous waste shipping manifests signed by the TSDF <u>indefinitely</u>. A microfiche copy is acceptable after the three year period. State reports, manifest exception reports, biennial reports (or equivalent state report) and any laboratory results for waste analyses must also be kept with these files for review by the regulatory agency. This manifesting and record keeping requirement also applies to hazardous waste materials being removed for disposal from Bureau remediation sites.

It should be noted that 40 CFR Sec. 262.34 only requires that a facility maintain copies of manifests for three years, however, RCRA also places a "cradle to grave" responsibility on the generator of hazardous waste materials. There is no statute of limitation clause releasing the Bureau from its responsibility of these materials. For this reason, accurate records should be kept indefinitely.

REPORTING

BOP facilities that ship hazardous waste off-site to a TSDF must submit a biennial report to the EPA Regional Administrator by March 1 of each even numbered year (EPA Form #8700-13A). This report details the facilities hazardous waste disposal activities during the previous calendar year.

RCRA EMERGENCY & SAFETY PLANS

Small Quantity Generators

Those BOP facilities operating within the classification as "small quantity generators" are exempt from the more stringent

preparedness & prevention and contingency plan requirements of RCRA (§ 264.1 g (3)).

Small quantity generator facilities are required to comply with the following safety and emergency requirements (§262.34 d(5):

> There must be at least one employee either on the premises or on call with the responsibility for coordinating the emergency response measures outlined below. This employee is identified by RCRA as the "emergency coordinator". The emergency coordinator's name and telephone number should be immediately accessible within the facility's control center.
>
> The emergency coordinator or their appointed designee must be trained and prepared to respond to any emergencies that may arise to include:
>
> > initiating fire fighting response;
> >
> > if a spill has occurred, contain the flow of hazardous waste to the extent possible, and direct clean up of hazardous waste and any contaminated materials or soil.

The facility must immediately notify the National Response Center if a fire, explosion, or other release (spill) which could threaten human health outside the facility or when the generator has knowledge that a spill has reached surface water (24 hour toll free number 800/424-8802). Please note, this is a RCRA requirement and that EPCRA also has additional notification requirements that must be considered.

Large Quantity Generator

Large quantity generators are held to more comprehensive preparedness program requirements than the SQG and need to comply with the preparedness & prevention and contingency plans in subparts C and D of 40 CFR part 265.

PREPAREDNESS AND PREVENTION PLANS

Maintenance & Operation (§265.31)

Facilities must be maintained and operated to minimize the possibility of a fire, explosion or any unplanned sudden or non-sudden release of hazardous waste or hazardous constituents to air, soil or surface water which could threaten human health or the environment.

Required Equipment (§265.32)

Facilities must be equipped and maintain the following:

internal communications or alarm system;

hand-held two-way radio immediately available at the scene of operations capable of summoning emergency assistance from local police departments, fire departments or State or local emergency response teams. This can be via control room relay;

fire fighting equipment, spill control equipment and decontamination equipment;

Access to communication or alarm system (§265.34)

Whenever hazardous waste is poured, mixed, spread or otherwise handled, all personnel involved in the operation must have immediate access to an internal alarm or emergency communication device, either directly or through visual or voice contact with another employee, unless such a device is not required by §265.32 above.

Aisle space (§265.35)

Must maintain aisle space to allow the unobstructed movement of personnel, fire protection equipment and decontamination equipment to any area of facility operation in an emergency, unless aisle space is not needed for any of these purposes.

Local Authorities (§ 265.37)

Arrangements must be made for the type of waste handled at the facility and the potential need for the services of these organizations:

familiarize police, fire departments and emergency response teams with the layout of the facility, properties of hazardous waste handled at the facility and entrances to roads and possible evacuation routes;

agreements with emergency response contractors and equipment suppliers

familiarize the facility's medical staff with the properties of hazardous waste handled at the facility and the types of injuries or illnesses which could result from fires, explosions or releases of these materials.

RCRA - CONTINGENCY PLAN and EMERGENCY PROCEDURES

Purpose and Implementation (§ 265.51)

This plan is to be designed in such a way as to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden release of hazardous waste materials to air, soil or surface water.

Contingency Plan Content (§ 265.52)

An acceptable RCRA contingency plan must describe the actions facility personnel must take immediately in response to fires, explosions or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil or surface water at the facility.

If the facility has already developed their Spill Prevention Control and Countermeasures Plan (CWA requirement) or an institution emergency plan, it need only be amended to incorporate hazardous waste management provisions that are sufficient to comply with the emergency procedures as listed below.

1. the plan must depict arrangements agreed to by local police, fire departments, and local emergency response teams to coordinate emergency services.

2. must list names, addresses and phone numbers of all persons qualified to act as emergency coordinator. When more than one person is identified, one individual must be named as primary emergency coordinator and others listed in the order in which they will assume responsibility as alternates.

3. plan must entail all emergency equipment at the facility and containment/decontamination equipment. The location of this equipment is also required.

4. the plan must incorporate an evacuation plan for the facility, or parts thereof, where there is a possibility that evacuation could be necessary. This plan must describe signal(s) to be used to begin evacuation, evacuation routes, and alternate evacuation routes.

Copies of the contingency plan must be maintained at the facility and readily accessible. It should be submitted to local police, fire departments, and State and local emergency response teams that may be called upon to provide emergency services.

Emergency Coordinator (§ 265.55)

In accordance with the RCRA regulations, there must be at least

one employee either at the facility or on call, at all times, with the responsibility for coordinating the emergency response measures. The person must be familiar with all aspects of the

facility's contingency plan, the location and characteristics of the waste handled at the facility, and the facility layout. In addition, this person must have authority to commit the resources needed to carry out the contingency plan.

TRAINING

OSHA requires that all employees who work with hazardous waste or who are expected to respond to a hazardous waste release, receive Hazard Communication and Hazardous Waste Operations & Emergency Response training (see Chapter VI, Employee and Worker Protection)

XII. MEDICAL WASTE MANAGEMENT

Federal standards addressing the handling, disposal, and shipment of medical waste are listed below for your review. For the most part, the disposal practices for medical waste parallel RCRA's procedures for the disposal of hazardous waste. It is important to maintain accurate disposal records and manifests. Also, ensure the material is being disposed of at a state approved facility and a certificate of disposal is provided:

- Resource Conservation and Recovery Act - Subtitle J)
- OSHA
- Department of Transportation (DOT) 49 CFR Part 171, 172, 173, 178
- The Center for Disease Control (CDC) also has guidelines for infectious waste
- The Joint Commission on Accreditation of Health Care Organizations (JCAHO) checks to see that hospitals are following required OSHA standards and is discussed in their Plant and Safety Technical Section
- OSHA is in the process of proposing tuberculosis requirements which may also address the management of medical waste.
- Most states have implemented their own requirements for medical waste management. Therefore, be certain to refer to your state or local health departments for medical waste disposal requirements.

Medical Waste Handling References

Topic	Standards & Regulations
Medical Waste Disposal	• EPA - 40 CFR Part 259 (RCRA - subtitle J) • OSHA - 29 CFR Part 1910.1030 • DOT - 49 CFR Part 171, 172, 173, 178 • BOP Safety Manual 1600.06 (p.10-7 Sec. H)
Hospital Management Standards	• JCAHO (Joint Commission on Accreditation of Health Care

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XIII. WASTE MINIMIZATION & LIFE CYCLING

Amendments to RCRA passed in 1984 required hazardous waste generators to certify that steps are taken to minimize the volume of hazardous wastes. Generators are required to have programs in place which reduces the volume and toxicity of waste generated to the extent that is economically practical.

These waste reduction techniques were not only intended to focus on lessening the amounts of RCRA wastes generated at facilities but were also to reduce the hazardous contaminants in air and water emissions as well.

Waste Minimization

is anything done to minimize or reduce the quantity or toxicity of a material before it becomes a regulated waste. Minimization can be viewed as a combination of housekeeping and storage, substitution, segregation of materials, consolidating wastes, and reusing, recycling or treating waste to exclude them from the requirements. Controlling materials will keep wastes materials from becoming hazardous wastes and thus avoid many of the problems involved in managing the waste once it is generated.

Waste Management

can be considered as anything done with a waste after if becomes a regulated, hazardous waste. Good hazardous waste management can be thought of simply as following proper regulations, following proper practices such as using materials appropriate for the job, and reducing the amount of wastes generated (minimization).

TIPS ON MINIMIZATION

In order to identify areas in which wastes can be reduced, it is essential to know what is being used on site for what purpose. Therefore, an inventory of purchased materials and a description of processes should be kept.

Inventory lists should be on hand so any person needing the reference can readily access the data. When the inventory is reviewed, any hazardous material should be noted. Also determine the quantities used as well as where they are stored.

When materials are ordered, quantities should be limited to those necessary for a specified need. Excess is not recommended. Large containers and quantities should be limited: buy what you use, use what you buy. An up-to-date MSDS form should be on file for each material used. The MSDS form will have most of the information needed for use and hazard evaluation. Sections IV, V

and VI of the MSDS, define the hazardous properties of the chemical.

Other minimization suggestions include the following:

- limit hazardous chemical use. Use "less-hazardous" materials, such as non-organic solvents and cleaners and latex paints. The use of halogenated organic materials is discouraged.

- emphasize biodegradability when purchasing materials.

- avoid mixing waste products. Mixing may result in a formerly non-hazardous waste becoming hazardous, and may make recycling difficult or impossible, or make disposal more expensive.

- **DO NOT** put hazardous chemical containers in the normal trash. Make sure that the original containers are completely empty before they are returned or recycled (See Chapter XI, *Hazardous Waste Management*, Residues in Empty Containers).

  Many chemical manufacturers request that the original drums be returned to them for disposal or their own reuse.

- Where possible, recycle, recover or reuse waste chemicals. an example would be the use of freon recovery units.

  As of July 1992, freon recovery is mandatory under the Clean Air Act. (see Chapter VIII, Air Resources Management, Ozone Depleting Substances)

- avoid using <u>more</u> of a hazardous product than needed. For example, use no more degreasing solvent, or pesticide than is necessary for a job.

TIPS ON WASTE MANAGEMENT

- conduct inspections regularly to make sure that waste handling procedures are being followed and that unlabeled, open drums do not accumulate in isolated areas.

NOTE the use of the Hazardous Materials Identification System (HMIS), or a comparable labeling system, will label and identify materials to comply with the Hazard Communication Standard 29 CFR 1919.1200 (See Chapter XI, Employee and Worker Protection, Section Hazard Communication Standard).

- ensure chemicals are properly stored. Chemical materials should be stored in the areas where they will be used. Section VII of the MSDS form contains precautions for safe handling, including the steps to take for spills, disposal and proper storage. In general, the facility should store

hazardous wastes in containers that are in good condition, kept tightly sealed and the contents clearly labeled. Usually, storage will be in the original container.

- be sure that employee training is up to date and organize periodic training sessions. OSHA 1910.1200, mandates that all employees receive a specified number of health and safety training hours before they are permitted to engage in hazardous waste operations (ref. HAZWOPER).

- be prepared for emergencies (see Chapters III and IV)

- interface with local and state hazardous waste management agencies, as well as EPA.

- follow the regulations provided by EPA, DOT, OSHA and other applicable agencies.

EXECUTIVE ORDER 12856

This order requires Federal agencies to develop written pollution prevention strategies and facility-specific plans, and to set goals for eliminating or reducing the acquisition, manufacturing, processing or use of toxic chemicals and extremely hazardous substances (EHS) (see Chapter III - Emergency Planning, Extremely Hazardous Substance Identification for clarification of an EHS or see 40 CFR Part 355 Appendices A and B for a listing).

Federal facilities must develop pollution prevention plans by the end of 1995. This plan should include:

- a detailed assessment of pollutants generated by the facility

- an analysis of pollution prevention opportunities and options

- procedures for implementing and evaluating pollution prevention measures.

This Order also stresses that each agency must commit to using pollution prevention/source reduction as the primary means to achieve and maintain compliance with all Federal, state and local environmental requirements.

By October 1, 1995, Federal agencies should have submitted their first annual progress report regarding the:

- status of the agency's strategy and facility plans;

- progress towards the 50 percent reduction goal and acquisition goals;

- progress in reviewing and revising specifications and standardized documents;

- a sampling of new and innovative pollution prevention technologies fostered;

- the TRI chemical releases reported for the previous year (if applicable).

Resource material:

EPA 600/R92/088, Federal Facility Pollution Prevention Planning Guide (513/569-7562)

EPA 300-B-94-007, Pollution Prevention in the Federal Government, Appendix A, has list of EPA publications regarding pollution prevention and minimization.